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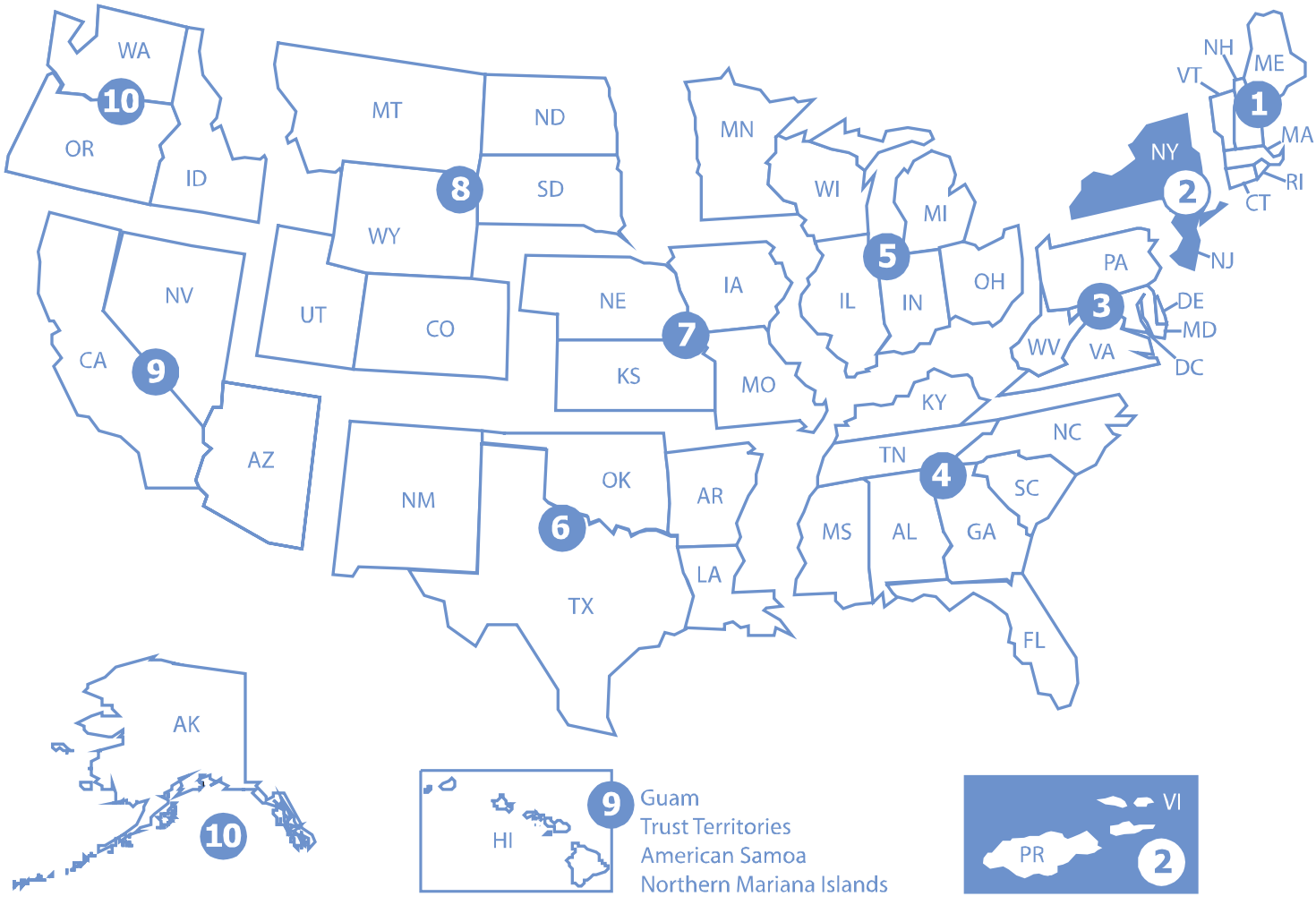
Office of Solid Waste and Emergency Response

Support Document for the Revised National Priorities List Final Rule – Sherwin-Williams/Hilliards Creek



Support Document for the Revised National Priorities List Final Rule Sherwin-Williams/Hilliards Creek

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State, Tribal, and Site Identification Center
Office of Solid Waste and Emergency Response
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EXECUTIVE SUMMARY

Section 105(a)(8)(B) of CERCLA, as amended by SARA, requires that the EPA prepare a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States. An original National Priorities List (NPL) was promulgated on September 8, 1983 (48 FR 40658). CERCLA requires that EPA update the list at least annually.

This document provides responses to public comments received on the Sherwin-Williams/ Hilliards Creek site located in Gibbsboro, New Jersey, proposed on April 19, 2006 (71 FR 20052). This site is being added to the NPL based on an evaluation under EPA's Hazard Ranking System (HRS) in a final rule published in the *Federal Register* in March 2008. Several additional sites are being promulgated concurrently.

INTRODUCTION

This document explains the rationale for adding the Sherwin-Williams/Hilliards Creek site in Gibbsboro, New Jersey, to the National Priorities List (NPL) of uncontrolled hazardous waste sites and also provides the responses to public comments received on this site. The EPA proposed this site on April 19, 2006 (71 FR 20052). This site is being added to the NPL based on an evaluation under the Hazard Ranking System (HRS) in a final rule published in the *Federal Register* in March 2008.

Background of the NPL

In 1980, Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. Sections 9601 *et seq*. in response to the dangers of uncontrolled hazardous waste sites. CERCLA was amended on October 17, 1986, by the Superfund Amendments and Reauthorization Act (SARA), Public Law No. 99-499, stat., 1613 *et seq.* To implement CERCLA, EPA promulgated the revised National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300, on July 16, 1982 (47 FR 31180), pursuant to CERCLA Section 105 and Executive Order 12316 (46 FR 42237, August 20, 1981). The NCP, further revised by EPA on September 16, 1985 (50 FR 37624) and November 20, 1985 (50 FR 47912), sets forth guidelines and procedures needed to respond under CERCLA to releases and threatened releases of hazardous substances, pollutants, or contaminants. On March 8, 1990 (55 FR 8666), EPA further revised the NCP in response to SARA.

Section 105(a)(8)(A) of CERCLA, as amended by SARA, requires that the NCP include

> criteria for determining priorities among releases or threatened releases throughout the United States for the purpose of taking remedial action and, to the extent practicable, take into account the potential urgency of such action, for the purpose of taking removal action.

Removal action involves cleanup or other actions that are taken in response to emergency conditions or on a short-term or temporary basis (CERCLA Section 101[23]). Remedial action is generally long-term in nature and involves response actions that are consistent with a permanent remedy for a release (CERCLA Section 101[24]). Criteria for placing sites on the NPL, which makes them eligible for remedial actions financed by the Trust Fund established under CERCLA, were included in the HRS. EPA promulgated the HRS as Appendix A of the NCP (47 FR 31219, July 16, 1982). On December 14, 1990 (56 FR 51532), EPA promulgated revisions to the HRS in response to SARA, and established the effective date for the HRS revisions as March 15, 1991.

Section 105(a)(8)(B) of CERCLA, as amended, requires that the statutory criteria provided by the HRS be used to prepare a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States. The list, which is Appendix B of the NCP, is the NPL.

An original NPL of 406 sites was promulgated on September 8, 1983 (48 FR 40658). At that time, an HRS score of 28.5 was established as the cutoff for listing because it yielded an initial NPL of at least 400 sites, as suggested by CERCLA. The NPL has been expanded several times since then, most recently on September 19, 2007 (72 FR 53463). The Agency also has published a number of proposed rulemakings to add sites to the NPL. The most recent proposal was on September 19, 2007 (72 FR 53909).

Development of the NPL

The primary purpose of the NPL is stated in the legislative history of CERCLA (Report of the Committee on Environment and Public Works, Senate Report No. 96-848, 96th Cong., 2d Sess. 60 [1980]).

> The priority list serves primarily informational purposes, identifying for the States and the public those facilities and sites or other releases which appear to warrant remedial actions. Inclusion of a facility or site on the list does not in itself reflect a judgment of the activities of its owner or operator, it does not require those persons to undertake any action, nor does it assign liability to any person. Subsequent government actions will be necessary in order to do so, and these actions will be attended by all appropriate procedural safeguards.

The NPL, therefore, is primarily an informational and management tool. The identification of a site for the NPL is intended primarily to guide EPA in determining which sites warrant further investigation to assess the nature and extent of the human health and environmental risks associated with the site and to determine what CERCLA-financed remedial action(s), if any, may be appropriate. The NPL also serves to notify the public of sites EPA believes warrant further investigation. Finally, listing a site may, to the extent potentially responsible parties are identifiable at the time of listing, serve as notice to such parties that the Agency may initiate CERCLA-financed remedial action.

CERCLA Section 105(a)(8)(B) directs EPA to list priority sites among the known releases or threatened release of hazardous substances, pollutants, or contaminants, and Section 105(a)(8)(A) directs EPA to consider certain enumerated and other appropriate factors in doing so. Thus, as a matter of policy, EPA has the discretion not to use CERCLA to respond to certain types of releases. Where other authorities exist, placing sites on the NPL for possible remedial action under CERCLA may not be appropriate. Therefore, EPA has chosen not to place certain types of sites on the NPL even though CERCLA does not exclude such action. If, however, the Agency later determines that sites not listed as a matter of policy are not being properly responded to, the Agency may consider placing them on the NPL.

Hazard Ranking System

The HRS is the principle mechanism EPA uses to place uncontrolled waste sites on the NPL. It is a numerically based screening system that uses information from initial, limited investigations -- the preliminary assessment and site inspection -- to assess the relative potential of sites to pose a threat to human health or the environment. HRS scores, however, do not determine the sequence in which EPA funds remedial response actions, because the information collected to develop HRS scores is not sufficient in itself to determine either the extent of contamination or the appropriate response for a particular site. Moreover, the sites with the highest scores do not necessarily come to the Agency's attention first, so that addressing sites strictly on the basis of ranking would in some cases require stopping work at sites where it was already underway. Thus, EPA relies on further, more detailed studies in the remedial investigation/feasibility study that typically follows listing.

The HRS uses a structured value analysis approach to scoring sites. This approach assigns numerical values to factors that relate to or indicate risk, based on conditions at the site. The factors are grouped into three categories. Each category has a maximum value. The categories are:

- likelihood that a site has released or has the potential to release hazardous substances into the environment;
- characteristics of the waste (toxicity and waste quantity); and

- people or sensitive environments (targets) affected by the release.

Under the HRS, four pathways can be scored for one or more threats as identified below:

- Ground Water Migration (S_{gw})
  - drinking water

- Surface Water Migration (S_{sw})
  The following threats are evaluated for two separate migration components, overland/flood migration and ground water to surface water.
  - drinking water
  - human food chain
  - sensitive environments

- Soil Exposure (S_s)
  - resident population
  - nearby population
  - sensitive environments

- Air Migration (S_a)
  - population
  - sensitive environments

After scores are calculated for one or more pathways according to prescribed guidelines, they are combined using the following root-mean-square equation to determine the overall site score (S), which ranges from 0 to 100**:**

$$S = \sqrt{\frac{S_{gw}^2 + S_{sw}^2 + S_s^2 + S_a^2}{4}}$$

If all pathway scores are low, the HRS score is low. However, the HRS score can be relatively high even if only one pathway score is high. This is an important requirement for HRS scoring because some extremely dangerous sites pose threats through only one pathway. For example, buried leaking drums of hazardous substances can contaminate drinking water wells, but -- if the drums are buried deep enough and the substances not very volatile -- not surface water or air.

Other Mechanisms for Listing

There are two mechanisms other than the HRS by which sites can be placed on the NPL. The first of these mechanisms, authorized by the NCP at 40 CFR 300.425(c)(2), allows each State and Territory to designate one site as its highest priority regardless of score. The last mechanism, authorized by the NCP at 40 CFR 300.425(c)(3), allows listing a site if it meets the following three requirements:

- Agency for Toxic Substances and Disease Registry (ATSDR) of the U.S. Public Health Service has issued a health advisory that recommends dissociation of individuals from the release;
- EPA determines the site poses a significant threat to public health; and
- EPA anticipates it will be more cost-effective to use its remedial authority than to use its emergency removal authority to respond to the site.

Organization of this Document

The following section addresses site-specific public comments. The site discussion begins with a list of commenters, followed by a site description, a summary of comments, and Agency responses. A concluding statement indicates the effect of the comments on the HRS score for the site.

Glossary

The following acronyms and abbreviations are used throughout the text:

ACO	Administrative Consent Order
Agency	U.S. Environmental Protection Agency
AOC	Administrative Order on Consent; also, area of concern
ATSDR	Agency for Toxic Substances and Disease Registry
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. Sections 9601 *et seq*., also known as Superfund
CLP	EPA's Contract Laboratory Program
EPA	U.S. Environmental Protection Agency
HRS	Hazard Ranking System, Appendix A of the NCP
HRS score	Overall site score calculated using the Hazard Ranking System; ranges from 0 to 100
NCP	National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300
NJDEP	New Jersey Department of Environmental Protection
NPL	National Priorities List, Appendix B of the NCP
PA/SI	Preliminary assessment/site inspection
PRP	Potentially responsible party
RCRA	Resource Conservation and Recovery Act of 1976 (U.S.C. 9601-6991, as amended)
RD/RA	Remedial design/remedial action
RI/FS	Remedial investigation/feasibility study
ROD	Record of Decision, explaining the CERCLA-funded cleanup alternative(s) to be used at an NPL site

SARA	Superfund Amendments and Reauthorization Act of 1986, Public Law No. 99-499, stat., 1613 *et seq*.
TDL	Target distance limit

RESPONSE TO COMMENTS

1. List of Commenters/Correspondents

EPA-HQ-SFUND-2006-0242-0003	Correspondence, dated March 9, 2006, from Jon S. Corzine, Governor of New Jersey.
EPA-HQ-SFUND-2006-0242-0005	Anonymous public comment.
EPA-HQ-SFUND-2006-0242-0006	Correspondence, dated May 19, 2006, from Allen J. Danzig, Associate General Counsel, Sherwin-Williams.
EPA-HQ-SFUND-2006-0242-0007	Correspondence from Victoria van Roden, Chief, EPA State, Tribal, and Site Identification Branch.
EPA-HQ-SFUND-2006-0242-0009	Correspondence, dated July 14, 2006, from Robert Andrews, U.S. House of Representatives.
EPA-HQ-SFUND-2006-0242-0010	Correspondence, dated July 19, 2006, from Alan J. Steinberg, EPA Region 2 Administrator.
EPA-HQ-SFUND-2006-0242-0012	Comment, dated July 19, 2006, submitted by Bruce S. Katcher, Manko, Gold, Katcher & Fox, LLP, on behalf of J&W Paintworks, LLC.
EPA-HQ-SFUND-2006-0242-0013	Comment, dated July 19, 2006, submitted by Bruce S. Katcher, Manko, Gold, Katcher & Fox, LLP, on behalf of Brandywine Operating Partnership, LP.
EPA-HQ-SFUND-2006-0242-0014	Comment, dated July 17, 2006, submitted by Susanne Peticolas, Gibbons, Del Deo, Dolan, Griffinger & Vecchione, on behalf of Sherwin-Williams Company.
EPA-HQ-SFUND-2006-0242-0015	Comment, dated September 13, 2006, submitted by Edward G. Campbell III, Mayor of the Borough of Gibbsboro, New Jersey.

2. Site Description

The Sherwin-Williams/Hilliards Creek site is composed of the location of releases from the manufacturing of paints and varnishes at the Sherwin-Williams/Lucas Paint Works facility (Paint Works facility) in Gibbsboro, New Jersey. The Paint Works facility made paints and varnishes from the 1840s to the 1970s. Since the 1970s, Sherwin-Williams has been gradually addressing contamination associated with the paint works. Most of the buildings that were at the facility are now gone; the facility area is now mainly in commercial use. The threat posed by the site evaluated using the EPA's Hazard Ranking System (HRS) scoring process included consideration of contaminant migration via the overland flow component and the ground water to surface water component of the surface water migration pathway. Four sources were included in the HRS scoring: a pool of free-phase product[1], former lagoons, and two areas of contaminated soils. Releases to Hilliards Creek due to facility operations were identified both by direct observation of contaminants entering or in direct contact with ground water and surface water, and by chemical analysis of upgradient and downgradient samples. The targets evaluated as exposed to the releases were downstream wetlands and a fishery within 15 miles of the sources.

The Sherwin-Williams/Hilliards Creek site is one of three proposed or promulgated Sherwin-Williams-related Superfund sites in the Gibbsboro area. The other two sites, the Route 561 Dump site and the U.S. Avenue Burn site, are associated with wastes from the Sherwin-Williams Gibbsboro facility and are in the same watershed as the Sherwin-Williams/Hilliards Creek site. The Route 561 Dump site (proposed to the National Priorities List [NPL]) is located about 1,000 feet east of the Paint Works facility. Drainage from this site is to White Sands Branch, which feeds Bridgewood Lake, which, in turn, feeds into Hilliards Creek just south of the Sherwin-Williams/Hilliards Creek facility through Haney Run from Bridgewood Lake to Hilliards Creek. The U.S. Avenue Burn site (already on the NPL) is located east-southeast of the site. Surficial drainage from the U.S. Avenue Burn site was predominantly to White Sand Branch downstream of the Route 561 Dump site and prior to its confluence with Bridgewood Lake.

3. Summary of Comments/Correspondence

The anonymous commenter supported the promulgation of the site to the NPL. The commenters J&W Paintworks, LLC (J&W), Brandywine Operating Partnership, L.P. (Brandywine), and Edward Campbell, the Mayor of Gibbsboro, opposed the listing of the site on the grounds that listing is unnecessary because the contamination is being addressed under consent agreements. They claimed that the listing will create unnecessary economic impacts and stigma on their properties and the Borough of Gibbsboro. They also questioned the delineation of the site boundaries. Mayor Campbell commented that the site, as proposed, was vague and ambiguous and that parts of Hilliards Creek had been previously evaluated as part of other Sherwin-Williams sites either on or proposed to the NPL.

Mayor Campbell also objected that the site had been proposed with no input from local legislative officials. He further commented that the Hilliards Creek site should have been proposed as a single site along with the Route 561 Dump site and the U.S. Avenue Burn site, both upstream Sherwin-Williams sites. He commented that the Agency's failure to do so circumvents Executive Order 1266. He stated that "parsing the Site into smaller parcels . . . effectively avoided a GAO review under EO 1266 or state objection as New Jersey is unable to aggregate the impact."

[1] The terms "free-phase product" and "free product" are used synonymously and refer to one or more substances that are in a liquid phase but have not dissolved into the ground or surface water. An example of free product is a slick of oil floating on a surface water body instead of dissolving into the water. If the product is heavier than water, it is referred to as a dense non-aqueous phase liquid (DNAPL). If the product is lighter than water, it is referred to as a light non-aqueous phase liquid (LNAPL).

Sherwin-Williams objected to the listing on the grounds that it is unnecessary and contrary to EPA policy and CERCLA, especially when the site is being addressed by a potentially responsible party (PRP). Sherwin-Williams also questioned the adequacy of the HRS docket for the site. Additionally, Sherwin-Williams commented that the HRS evaluation is technically incorrect and inadequately supported. Sherwin-Williams cited what it considered "overarching issues," including errors in application of the HRS, data quality deficiencies, deficiencies with selection of background samples, inaccurate sample locations, and inaccurate or insufficient HRS documentation record references. Sherwin-Williams raised numerous other HRS issues, focusing on the consideration of removal actions already completed and/or planned, the characterization of sources, and the establishment of observed releases to surface water and ground water.

3.1 Requests for Extension

Allen J. Danzig, Associate General Counsel, Sherwin-Williams (Sherwin-Williams), and Representative Robert Andrews (Congress of the United States, First District, New Jersey) requested extensions of the public comment period for the Sherwin-Williams site. Sherwin-Williams also submitted two items of correspondence dealing with a Freedom of Information Act (FOIA) Request on behalf of Sherwin-Williams.

In its May 19, 2006, letter, Sherwin-Williams requested a 60-day extension of the comment period because of the size of the HRS documentation package and supporting references. It also indicated that it had filed a FOIA request on April 21, 2006, for documents not contained in the HRS package to which Sherwin-Williams had received an acknowledgement but no response. It concluded "[i]nformation provided in response to this request is needed in order for Sherwin-Williams to submit comments." This FOIA request asked for:

> A copy of all documents at the Superfund Docket Office which EPA relied on to support the proposed NPL listing referenced above or which otherwise relates to the proposed NPL listing.

On June 30, 2006, Sherwin-Williams acknowledged that it was provided all information that EPA relied upon to support the proposal to place the site on the NPL (i.e., the HRS documentation record and references). Sherwin-Williams stated that the FOIA letter also requested:

> (2) all documents, correspondence, and data relied on or reviewed by [emphasis added] EPA in proposing to list the site and (3) all other information relating to EPA's proposal to place the site on the National Priorities List.

Sherwin-Williams stated that EPA had been unclear whether the EPA response of June 15, 2006, "included all information in EPA Regional or Headquarters files requested in (2) and (3)." Sherwin-Williams specifically referenced memoranda and correspondence between the HRS Contractor and Region II, and the correspondence between EPA Region II and EPA Headquarters.

In response, EPA has responded to all requests for extension to the comment period from Sherwin-Williams (and others) and has completed response to the FOIA request by providing all appropriate documents.

Victoria van Roden, Chief, EPA State, Tribal, and Site Identification Branch, granted Sherwin-Williams a 30-day extension of the comment period to July 19, 2006 (EPA-HQ-SFUND-2006-0242-0007.)

Regarding Sherwin-Williams's April 21, 2006, FOIA request, George Pavlou, Director, Emergency and Remedial Response Division, EPA Region 2, responded on June 17, 2007, noting that Sherwin-Williams had been provided all public documentation supporting the proposal of the site. Mr. Pavlou stated that because other documents requested were predecisional and deliberative, EPA denied their request pursuant to the exemption from disclosure provisions of FOIA. This correspondence has been added to the site docket at promulgation. Furthermore, the proposed addition of the Sherwin-Williams/Hilliards Creek site to the NPL is based solely on the factual information contained in the HRS documentation record and supporting references (i.e., the HRS documentation package). As acknowledged by Sherwin-Williams in its June 30, 2006, letter, this documentation was made available to Sherwin-Williams when it visited the EPA Region 2 Docket. Any additional documents obtained by Sherwin-Williams in response to its requests were not cited or used in any way to support the HRS scoring of the site and its promulgation to the NPL.

On July 14, 2006, Representative Andrews requested an extension of the comment period on behalf of the Mayor and residents of the Borough of Gibbsboro. He reported their belief that "EPA had not adequately sought and received public comment" on the proposed listing. He also stated that EPA had agreed to hold a public hearing to address concerns of the public and answer questions "concerning the potential impacts on the Gibbsboro community." He requested an extension of the comment period until after this meeting to "properly address the concerns of the residents of the Borough of Gibbsboro."

In response, on July 19, 2006, EPA Region 2 Administrator Alan J. Steinberg responded to Representative Andrews (EPA-HQ-SFUND-2006-0242-0010), announcing an additional 60-day extension of the comment period from the previous closing date of July 19, 2006. Additional comments concerning the opportunity for public input to the listing decision are addressed in section 3.4, *Local Input*, of this support document.

3.2 Support for Listing

In a letter dated March 9, 2006, Jon S. Corzine, Governor of New Jersey, requested that the Sherwin-Williams/Hilliards Creek site be added to the NPL. One anonymous commenter also supported the listing (EPA-HQ-SFUND-2006-0242-0003).

In response, EPA is adding the Sherwin-Williams/Hilliards Creek site to the NPL. Listing makes a site eligible for remedial action funding under CERCLA, and EPA will examine the site to determine the appropriate response action(s). Actual funding may not necessarily be undertaken in the precise order of HRS scores, however, and, upon more detailed investigation, may not be necessary at all in some cases. EPA will determine the need for using Superfund monies for remedial activities on a site-by-site basis, taking into account the NPL ranking, State priorities, further site investigation, other response alternatives, and other factors as appropriate.

3.3 Docket Material

Sherwin-Williams complained of "inaccurate or insufficient" HRS documentation record references. Sherwin-Williams asserted that at least three figures (maps) cited multiple times in the HRS documentation package were not provided to Sherwin-Williams either in hard copy or electronically. Sherwin-Williams gave an example of a missing figure (Figure 3-2 of Reference 31 [RI report]) cited 131 times to support the location of most of the source samples, 4 times to document locations pertinent to the surface water pathway, and 11 times to document the location of release and background samples. It concluded, "[t]hus, the accuracy of the sample locations cannot be verified." It also cited Figure 2-4 of Reference 31 as missing. Sherwin-Williams also objected to the lack of field notes and other primary references as opposed to the summary documents cited in the HRS documentation record. It stated that

primary references were not provided for the sampling work performed by Weston and other contractors summarized in nine HRS documentation record references. Specifically, Sherwin-Williams pointed to the lack of field notes to confirm sample times and locations.

Sherwin-Williams also cited examples of pages that were incomplete in the electronic copy of the references and missing altogether in the hard copy of the references. It concluded, "[d]ata without supporting references cannot be used to evaluate the Site." Sherwin-Williams also claimed that a partial review of the reference citations in the HRS documentation record revealed more than 100 incorrect citations and concluded that "incorrectly referenced data" cannot be used to evaluate the site."

In response, where specific comments regarding the evaluation of site sources or analytical data used in the HRS evaluation are noted by Sherwin-Williams, those comments have been incorporated in the relevant sections later in this support document. For a more detailed discussion on these topics, see sections 3.12, *Analytical Data Quality Issues*, 3.14.2, *Association of Substances with Sources*, and *3.14.2.2, Availability of Source Sample Analysis Reference Materials and Accuracy of Reference Citations,* of this support document.

Regarding the use of secondary references, Sherwin-Williams did not specifically point out any information from secondary sources, other than information on sample times and locations, that it thought was either incorrect or unacceptable for HRS purposes. All specific comments on information from secondary references questioned by Sherwin-Williams or other commenters are addressed in this support document. Additionally, some of the secondary references cited in the HRS documentation record were summary reports of efforts undertaken and prepared for Sherwin-Williams by its contractor and were submitted to EPA for regulatory purposes as part of a remedial investigation/feasibility study (RI/FS) for which the data were collected as a requirement of an Administrative Order on Consent (AOC) between Sherwin-Williams and the New Jersey Department of Environmental Protection (NJDEP). For additional, more specific information on analytical data used to evaluate the Sherwin-Williams/Hilliards Creek site, see section 3.12, *Analytical Data Quality Issues*, of this support document.

Regarding Figure 3-2 of Reference 31, *Remedial Investigations Report, The Paint Works Corporate Center, Gibbsboro, Camden County, New Jersey, Volume I*, which Sherwin-Williams stated was missing from the electronic and hard copy materials it was provided, Figure 3-2 is an oversized map titled, *Paint Works Corporation Center Sample Location Plan*. Figure 2-4 of Reference 31 also is an oversized map titled, *Topographic Map 1898*. These figures are included as part of the hard copy references to the HRS documentation record. The maps were prepared or compiled by Roy F. Weston, Inc., Sherwin-Williams's contractor, as part of the above mentioned remedial investigation (RI). These figures are not part of the electronic copy of Reference 31 because the map was too large. Sherwin-Williams's contractor, Weston Solutions, picked up an entire hard copy of the HRS package, including Reference 31, on May 1, 2006, from the EPA Region 2 docket, and did not indicate any problems or missing documents. (See the EPA Region 2, 2-Way Memo, regarding the "transmittal of Sherwin-Williams/Hilliards Creek to Weston Solutions" dated May 1, 2006. This memo has been added to the site docket at promulgation.) Thus, Sherwin-Williams had access to a hard copy of this map even though it was not in the electronic version of the reference. Additionally, since the document was prepared for Sherwin-Williams by its contractor, Sherwin-Williams easily could have obtained it if it was not in the materials provided by EPA. Regarding Sherwin-Williams's comments that pages were incomplete in the electronic copy of the references and missing altogether in the hard copy of the references, and that the HRS documentation record revealed more than 100 incorrect citations**,** these comments are addressed in sections 3.14.2.2, *Availability of Source Sample Analysis Reference Materials and Accuracy of Reference Citations*, and 3.17, *Errors in Descriptive Facts*, of this support document.

3.4 Local Input

Mayor Campbell and U.S. Representative Andrews (First District, New Jersey) commented that EPA proposed the Sherwin-Williams/Hilliards Creek site without any input from local "municipality or private property owners." The Mayor claimed that the local communities of Voorhees Township and Lindenwold Borough were unaware that "this rule includes the Kirkwood Lake in those municipalities." The Mayor claimed that no representatives of local government, elected officials, or State legislative representatives were notified or asked for input regarding public opinion. He continued that this omission is so "egregious" that a New Jersey State senator was sponsoring legislation (retroactive to January 2006) requiring public notice and hearings prior to New Jersey State concurrence. He explained that even local Federal officials (U.S. House and Senate representatives) were not consulted prior to listing. Citing EPA's Web site, Mayor Campbell commented that failure to involve the community "runs directly counter to EPA policy." Finally, he claimed that, given the long history of EPA involvement in the community and the "unquestionable financial impact," this failure supports his request for "immediate withdrawal of the proposed listing."

In response, EPA has proposed the Sherwin-Williams/Hilliards Creek site for addition to the NPL consistent with the requirements of CERCLA and the Administrative Procedure Act. EPA adds sites to the NPL in one of three ways: as a State priority site (one per State), as the result of an Agency for Toxic Substances and Disease Registry health advisory, or based on an evaluation using EPA's HRS. The Sherwin-Williams/Hilliards Creek site was proposed to the NPL based on an evaluation using the HRS. Sites are proposed in the Federal Register, and a public comment period generally lasting 60 days is provided to give interested parties an opportunity to express support or concern about the proposed listing. In addition to the comment period, in this case, the public was granted two extensions, one of 30 days and another of 60 days, providing additional opportunity for public input to the listing process. As demonstrated by Mayor Campbell's and U.S. Representative Andrew's submission of comments on the proposed listing, they were aware of this process and have taken the opportunity to submit comments. Their comments were considered by EPA as were all public comments, and EPA's responses to them are provided in this support document.

In addition to the opportunity for public participation in the site listing process, the Agency makes available to the public numerous resources and opportunities for involvement in the remediation process after a site is added to the NPL. A full array of resources and mechanisms for public participation is provided at EPA's Web site, http://www.epa.gov/superfund/action/community/index.htm.

3.5 Extent of Site

Brandywine Operating Partnership, L.P. (Brandywine), Sherwin-Williams, and Gibbsboro Mayor Campbell questioned the adequacy of site boundary delineation for the Sherwin-Williams/Hilliards Creek site. Brandywine acknowledged that the Agency was not required to provide precise geographical boundaries of a site at the time of proposal but questioned the extent of the site as described in the listing documents. Brandywine commented that "it seems clear that the entire Paint Works will be significantly and unnecessarily affected by the listing."

Sherwin-Williams said "[t]he proposed site definitions are inconsistent and overbroad." Sherwin-Williams stated that attachments to a letter to EPA from Lisa Jackson, Commissioner of NJDEP, describe a different extent of site than EPA presents in its materials. The NJDEP letter was sent with and concurs with the letter from the New Jersey Governor supporting the site listing.

Sherwin-Williams objected to the reference to the Lucas Plant encompassing "approximately 60 acres" in the site description in the HRS documentation record. It commented that the site summary in the HRS

documentation record (see pages16-20 of the documentation record as proposed) expands the extent of site, specifically to the north and south, described in the letter from NJDEP to also include the entirety of Hilliards Creek to the south and areas north to Route 561. Sherwin-Williams objected that "[o]ver 50 % of the area encompassed by the blocks and lots . . . are located north and upgradient of the former plant site" and should not have been included in the site. It also noted that some of the area identified by New Jersey was part of the U.S. Avenue Burn Site (already on the NPL) and was not included in the HRS evaluation. Sherwin-Williams further objected to the inclusion of the lagoons (Source 3 in the HRS documentation record as proposed), which were not referenced in the letter from NJDEP. Sherwin-Williams stated that the lagoons should not have been included because they were the subject of a "qualifying removal." Brandywine also commented that much of the Paint Works property is considered part of the site even though it has been "covered by buildings and paved parking areas since the plant closure in 1978 and that these structures cap any potentially contaminated areas around the office park by means of a commonly used engineering control remedy to address contamination on brownfields properties."

Sherwin-Williams also commented that portions of the EPA-designated site include areas EPA has not investigated. Sherwin-Williams stated that the focus of the listing should be the source areas. Citing HRS guidance that "refers to a site as the area that is occupied by the sources, and the area that lies between the sources," it identified the specific blocks and lots it considered to be consistent with the definition of site. Sherwin-Williams expressed most concern over areas located north of the former manufacturing plant that now contain restaurants, banks, and vacant land proposed for redevelopment. It claimed that there was no basis for the inclusion of these areas and that their inclusion was in violation of the Mead decision (Mead Corp. v. Browner, 100 F. 3d 152 [1996]), which "invalidated EPA's aggregation policy." Sherwin-Williams concluded that its comments "should not be construed to mean that Sherwin-Williams supports a proposal to list a more limited area of the Site." It stated that the site should not be listed due to its response activities at the site and because "the HRS Doc[umentation] Record itself does not support EPA's evaluation of the source areas or the Site scoring."

Gibbsboro Mayor Campbell also commented that the site description included in the HRS documentation record as proposed was vague and ambiguous. He specifically noted that the site should not include the entire 60 acres identified as the Paint Works property. He noted that this area, "Gibbsboro's largest and most valuable ratable," was identified as part of the site by EPA, New Jersey's Governor Corzine, and the NJDEP. The Mayor commented that "[t]esting to date by Sherwin-Williams, NJ DEP [sic] and private entities indicates that much of this area is NOT contaminated" and that the site definition "must be refined to exclude unconstrained developable lands within Gibbsboro." He claimed that this vague site description placed a severe stigma on the entire area and Gibbsboro.

In response, the HRS documentation record as proposed is consistent with the HRS. As explained in Part I, Section F, *Does the NPL Define Boundaries of Sites?*, of the *Federal Register* notice announcing proposal of the Sherwin-Williams/Hilliards Creek site (71 FR 20052, April 19, 2006):

> placing a site on the NPL is based on an evaluation, in accordance with the HRS, of a release or threatened release of hazardous substances, pollutants, or contaminants. However, the fact that EPA initially identifies and lists the release based on a review of contamination at a certain parcel of property does not necessarily mean that the site boundaries are limited to that parcel.

CERCLA Section 105(a)(8)(A) requires EPA to list national priorities among the known "releases or threatened releases" of hazardous substances; thus, the focus is on the release, not precisely delineated boundaries. Further, CERCLA Section 101(9)(B) defines a "facility" to include "any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located."

The "come to be located" language gives EPA broad authority to clean up contamination when it has spread from the original source. On March 31, 1989 (54 FR 13298), EPA stated:

> HRS scoring and the subsequent listing of a release merely represent the initial [emphasis added] determination that a certain area may need to be addressed under CERCLA. Accordingly, EPA contemplates that the preliminary description of facility boundaries at the time of scoring will need to be refined and improved as more information is developed as to where the contamination has come to be located; this refining step generally comes during the RI/FS stage.

The revised HRS (55 FR 51587, December 14, 1990) elaborates on the "come to be located" language, defining "site" as "area(s) where a hazardous substance has been deposited, stored, disposed, or placed, or has otherwise come to be located. Such areas may include multiple sources, and may include the area between the sources."

Until the site investigation process has been completed and a remedial action (if any) selected, EPA can neither estimate the extent of contamination at the site, nor describe the ultimate dimensions of the NPL site. Even during a remedial action (e.g., the removal of buried waste) EPA may find that the contamination has spread further than previously estimated, and the site definition may be correspondingly expanded. In addition, if another, unrelated area of contamination is discovered elsewhere on the property, EPA may decide to evaluate that release for the NPL

In the case of the Sherwin-Williams/Hilliards Creek site, the HRS documentation record identified the site to consist of the sources at the Sherwin-Williams/Lucas plant facility as well as releases of hazardous substances to ground water and downstream releases in and adjacent to Hilliards Creek. In response to the commenters' concerns about sections of the facility they claim are not contaminated, per Part I, Section F, *Does the NPL Define the Boundaries of the Site?,* of the April 19, 2006 *Federal Register* notice (page 20054):

> . . . while geographic terms are often used to designate the site . . . in terms of the property owned by a particular party, the site properly understood is not limited to that property (e.g., it may extend beyond the property due to contaminant migration, and conversely may not occupy the full extent of the property (e.g., where there are uncontaminated parts of the identified property, they may not be, strictly speaking, part of the 'site').

EPA regulations provide that the "nature and extent of the problem presented by the release" will be determined by an RI/FS as more information is developed on site contamination (40 CFR 300.5). Part I, Section F, *Does the NPL Define the Boundaries of the Site?,* of the April 19, 2006, *Federal Register* notice (page 20055) further states that:

> [I]t generally is impossible to discover the full extent of where the contamination "has come to be located" before all necessary studies and remedial work are completed at a site . . . Thus, in most cases, it may be impossible to describe the boundaries of a release with absolute certainty.

Regarding Sherwin-Williams's references to block and lot numbers identified in a letter from Lisa Jackson, Commissioner of the NJDEP, these areas are identified in a section of an attachment to Ms. Jackson's letter titled "Ownership History." This section briefly outlines the ownership of property in the area of the Sherwin-Williams plant from 1851 (when it was owned by John Lucas and Company) to the present. Most of the parcels to which Sherwin-Williams objects were purchased between 1981 and 1983 by Robert K. Scarborough and were later sold to Brandywine Realty Trust. Nothing in this attachment or

in Ms. Jackson's letter suggests that these areas were considered to be part of the site proposed for the NPL. In fact, the section of the attachment titled "Site Description" coincides closely with the site description on page 16 of the HRS documentation record as proposed, citing the same "approximately 60 acres" estimate of the size of the original Sherwin-Williams/Lucas facility.

EPA agrees with Sherwin-Williams's observation that certain areas identified by Ms. Jackson were part of the U.S. Avenue Burn site and should not be considered part of the Hilliards Creek site. These areas were identified in Ms. Jackson's letter as Block 23, Lot 1, and Block 25, Lot 1, and were included in the U.S. Avenue Burn site promulgated on the NPL on July 22, 1999 (64 FR 39878). None of the areas to which Sherwin-Williams objected, either north of the plant site or to the east at the U.S. Avenue Burn site, were included in the delineation of the Sherwin-Williams/Hilliards Creek site. Thus, *Mead Corp. v. Browner*, 100 F.3d 152 (D.C. Cir. 1996), has no relevance here.

Regarding Brandywine's reference to the current conditions at the site, specifically to the presence of buildings and paved parking areas at the office park, the site area as defined in the HRS documentation record as proposed is consistent with the HRS definition of "site" and is an accurate reflection of current conditions at the site. (See section 3.11, *Withdraw Listing While Sherwin-Williams Completes Response Actions*, of this support document.) As discussed above, the HRS provides that a "site" includes "[a]rea(s) where a hazardous substance has . . . come to be located." Hazardous substances have come to be located at the office park. Thus, those areas fall within the terms of the HRS definition regardless of their remediation status. Sherwin-Williams's objection to the inclusion of the lagoons as Source 3 in the HRS documentation record as proposed due to the completion of response actions in this area is addressed in section 3.13, *Source 3 Removal,* of this support document.

3.6 Redundancy of Site Listings

Gibbsboro Mayor Campbell noted that the HRS documentation record identified contaminated soils and sediments extending approximately 4,200 feet down Hilliards Creek. He commented that both the Sherwin-Williams's U.S. Avenue Burn site and the Route 561 Dump site are located upgradient of the Paint Works location. He commented, "[t]he inclusion of approximately the lower 3,000 feet of the Hilliards Creek, from its confluence with the White Sands Branch near the outflow of Bridgewood Lake, is duplicitous [sic] with the previous nominations which include material emanating from the sources upstream."

In response, while the three sites are in the same surface water watershed and the HRS standard target distance limits (TDLs) for the surface water pathway for the three sites overlap, EPA does not have, nor did the commenter provide, any information demonstrating that the sites (or releases included in each) overlap. The locations of the three sites and the surface water bodies are shown in Figure 1 of this support document. In the HRS documentation record as proposed, the sites are shown on Figure 2-1 (a topographic quadrangle map) of Reference 6 (*Revised Work Plan for RI/FS Activities, Gibbsboro, New Jersey*, June 1997) of the Sherwin-Williams/Hilliards Creek HRS documentation record as proposed. The three sites are all in the same watershed. The Route 561 Dump site (proposed to the NPL on July 28, 1998 [63 FR 40247]) and the U.S. Avenue Burn site (promulgated to the NPL on July 22, 1999 [64 FR 39878]) are located along White Sands Branch, between Clement and Bridgewood Lakes. The U.S. Avenue Burn site also drains to Haney Run before it merges with White Sands Branch. White Sands Branch and Haney Run flow into Bridgewood Lake. The discharge from this lake enters into Hilliards Creek. The surface water portion of the Sherwin-Williams/Hilliards Creek site starts above the confluence of the discharge from Bridgewood Lake and Hilliards Creek, where Hilliards Creek goes under Foster Avenue. The watershed continues in Hilliards Creek through Kirkwood Lake and into the Cooper River for all three sites. Thus, releases from the Route 561 Dump and the US Avenue Burn site

to surface water could flow via White Sands Branch and Bridgewood Lake into Hilliards Creek at locations south and downstream of the sources included in the Hilliards Creek site.

The portion of the watershed in which the TDLs for each of the three sites overlap starts where the discharge from Bridgewood Lake enters into Hilliards Creek. HRS Section 4.1.1.2, *Target distance limit*, specifies the surface water TDL for sites. HRS Section 1.1, *Definitions*, states that the TDL is "[t]he maximum distance over which targets for the site are evaluated."

For the surface water pathway, as explained in HRS Sections 4.1.1.1, *Definition of hazardous substance migration path for overland/flood migration component,* and 4.1.1.2, *Target distance limit*, the TDL starts at the most upstream point at which releases from a site source probably enter the surface water body (the probable point of entry [PPE]). At most sites, including the Hilliards Creek site, the TDL extends downstream 15 miles from the furthest downstream point at which releases from a site source probably enter the surface water body. The surface water TDL at the Sherwin-Williams/Hilliards Creek site is described in section 4.1.1.1, *Definition of Hazardous Substance Migration Path for the Overland/Flood Component,* and again in section 4.2.1.2, *Hazardous Substance Migration Path for Ground Water to Surface Water,* of the HRS documentation record as proposed. Runoff from the Sherwin-Williams/Hilliards Creek site, including runoff that could contain contaminants from Source 1 (free-phase product escaping to the surface through seeps) and contaminated soil Sources 2 and 4, flows to a series of storm drains that meet and enter Hilliards Creek immediately south of Foster Avenue (the most upstream PPE). The PPE from Source 3, the surface impoundments, is described as a pipe extending from the north bank of one of the surface impoundments directly to Hilliards Creek (the most downstream PPE). The TDL from the most downstream PPE at the Sherwin-Williams/Hilliards Creek site extends from the PPE at Source 3 into Hilliards Creek for a distance of 1.2 miles west to Kirkwood Lake. As stated in section 4.1.1.2 of the HRS documentation record as proposed, "Kirkwood Lake continues in a westerly direction for approximately 4,224 feet then empties into the Cooper River. The Cooper River continues in a northwesterly direction to complete the 15-mile surface water downstream TDL." Thus, the entire reach of Hilliards Creek from PPEs at the Sherwin-Williams/Hilliards Creek site downstream to the Cooper River is considered within the TDL for the site in the HRS documentation record as proposed.

The TDLs for the Route 561 Dump and the U.S. Avenue Burn sites also extend into the Cooper River, and are described in the HRS documentation packages for each at the time of the proposal of the Route 561 Dump site (July 28, 1998 [63 FR 40247]) and the promulgation of the U.S. Avenue Burn site (July 22, 1999 [64 FR 39878]). The TDL for the Route 561 Dump site starts in White Sands Branch immediately downstream of Clement Lake and extends 15 miles from where this branch passes under Haddenfield Berlin road into the Cooper River. The U.S. Avenue Burn site TDL starts upstream of where White Sands Branch and Haney Run passes under U.S. Avenue and extends 15 miles downstream from where White Sands Branch flows into Bridgewood Lake through Hilliards Creek into the Cooper River. Therefore, the TDLs for the three sites overlap in Hilliards Creek, Kirkwood Lake and into the Cooper River.

The fact that contaminated surface waters associated with each listing are in the same watershed and that the TDLs overlap does not mean that the sites overlap. For HRS purposes, the site boundaries are limited to where contamination has come to be located. HRS Section 1.1, *Definitions*, defines site as:

> Area(s) where a hazardous substance has been deposited, stored, disposed, or placed, or has otherwise come to be located. Such areas may include multiple sources and may include the area between sources.

Thus, the portion of the surface water within the TDL in which releases from sources at each site have come to be located would be considered part of the site. The locations of contamination in surface water attributable to the three sites are described below and shown in Figure 2-1 (a topographic quadrangle map) of Reference 6 (*Revised Work Plan for RI/FS Activities, Gibbsboro, New Jersey*, June 1997) to the HRS documentation record as proposed. Contamination in Hilliards Creek attributable to the Sherwin-Williams/Hilliards Creek facility is identified in the HRS documentation record as starting below the discharge from Silver Lake, immediately south of Foster Avenue[2] and extending downstream approximately 1.3 miles to Kirkwood Lake.

The surface water releases identified both at the U.S. Avenue Burn site and the Route 561 Dump site enter Haney Run and White Sands Branch upstream of Bridgewood Lake. Surface water contamination associated with the Route 561 Dump site as proposed was limited to the wetland area bordering White Sands Branch immediately adjacent to the Dump. The most downstream sediment sample indicating contamination from this site was located in White Sands Branch upstream of the culvert carrying the Branch beneath Route 561 and approximately 1,000 feet upstream of its confluence with Hilliards Creek. The contamination attributable to the U.S. Avenue Burn site enters White Sands Branch directly or at its confluence with Haney Run and extends slightly into Bridgewood Lake at the confluence of the Lake and White Sands Creek. Both streams flow through sources at the U.S. Avenue Burn site. Thus, the contaminated portions of the TDL for the three sites do not overlap.

EPA explored the possibility of contamination from either the U.S. Avenue Burn site or the 561 Dump site reaching Hilliards Creek by sampling in Bridgewood Lake upstream of the confluence of White Sands Branch/Haney Run and Hilliards Creek but downstream of the U.S. Avenue Burn site area of known contamination. Samples from this location contained significantly lower levels of lead than samples from Hilliards Creek or upstream in the U.S. Avenue Burn contamination area. The levels are well below that which would qualify as locations of releases from any of the three sites and were actually the location of background samples for the Hilliards Creek site (see page 116 of the HRS documentation record as proposed). This confirms that the sites do not overlap.

Hence, the individual contaminated areas that compose the three sites as proposed or promulgated do not overlap, and the listing of the Sherwin-Williams/Hilliards Creek site is not redundant. As explained above, the parts of the TDLs that overlap are not areas of contamination attributable to all three sites or even two of the sites.

EPA notes that there is nothing in the HRS or CERCLA that precludes a particular stream reach from being within the TDL of more than one NPL site. As discussed above, the HRS explains how the TDL is to be determined for each site.

3.7 Single Site Approach to Listing

Mayor Campbell commented that "[n]otwithstanding that the Borough opposes the NPL listing, the Hilliards Creek/Sherwin-Williams Site is one of several sites associated with the former John Lucas Paint Factory in Gibbsboro . . ." He commented that the Sherwin-Williams/Hilliards Creek site, the Route 561 Dump site, and the U.S. Avenue Burn site all impact Hilliards Creek from its confluence with White Sands Branch, and that all three sites contain materials that are byproducts or waste products from the former manufacturing operations at the Gibbsboro operations. The Mayor concluded, "there would be

[2] Foster Avenue is the most upstream location at which contamination is entering Hilliards Creek from the facility, called the most upstream probable point of entry (PPE). (See section 4.1.1.1, *Definition of Hazardous Substance Migration Path for Overland/Flood Component*, of the HRS documentation record as proposed.)

less confusion and economic distress if there was a single better defined listing rather than numerous redundant and ambiguous listings and proposed listings."

In response, EPA did not list the Route 561 Dump site, the U.S. Avenue Burn site, and the Hilliards Creek site as a single site for two reasons. EPA and the State of New Jersey have been working toward the cleanup of all three areas for a considerable period of time. Initially, EPA and New Jersey agreed to have New Jersey address the investigation and remediation of the Sherwin-Williams Paint Works facility and its discharge to Hilliards Creek (the Hilliards Creek site) through a cooperative agreement with Sherwin-Williams. EPA thus investigated and proposed the two other sites, the Route 561 Dump site and the U.S. Avenue Burn site to the NPL so that these releases would be addressed under the Superfund Program. It was not until the State of New Jersey, after working with Sherwin-Williams for several years, determined that inadequate progress was occurring that the State of New Jersey requested that EPA also place the Hilliards Creek site on the NPL.

The second reason that the three sites were not listed as a single site is because the releases from each of these sites, based on the available sampling at the time of proposal of each site, appear to be separate and the contamination does not appear to commingle. As explained above in section 3.6, *Redundancy of Site Listings,* of this support document, releases from the Route 561 Dump site (currently proposed to the NPL) and the U.S. Avenue Burn site (already on the NPL) located upstream of the Sherwin-Williams/Hilliards Creek site, would flow via White Sands Branch to Bridgewood Lake, which flows into Hilliards Creek south and downstream of the Sherwin-Williams/Hilliards Creek site.

EPA explored the possibility of contamination from the three sites commingling in the shared surface water pathways by selecting background surface water sample locations between the Hilliards Creek site and the other two sites. Specifically, EPA sampled in the stream draining Bridgewood Lake but upstream of its confluence with Hilliards Creek. Samples from this location contained significantly lower levels of lead than samples from Hilliards Creek and at levels considered representative of background conditions for the area. This result suggests that the releases from the Route 561 Dump site and the U.S. Avenue Burn site are not likely reaching Hilliards Creek, and the releases do not likely commingle.

Moreover, even if the sites may overlap, this site alone scores 50 through a proper application of the HRS and therefore, the site qualifies for listing on the NPL.

3.8 Executive Order 12866

Gibbsboro Mayor Campbell commented that evaluating the Hilliards Creek, Route 561 Dump, and U.S. Avenue Burn sites separately precluded the State of New Jersey from aggregating impacts. He claimed that these actions circumvent Executive Order 1266 [sic], which, if triggered, would result in a Government Accountability Office (GAO) review. He argued that "[a]ll three sites impact the Hilliards Creek from its confluence with White Sands Branch. All three sites contain materials which are byproducts or waste products from the former manufacturing operations at the Gibbsboro operations." Mayor Campbell concluded that "[n]otwithstanding that the Borough believes the current nomination violates Executive Order 1266 [sic], EPA has acted to circumvent EO 1266 [sic] by making several separate smaller NPL nominations rather than a single nomination . . . By parsing the Site into smaller parcels for nomination, EPA has effectively avoided a GAO review under EO 1266 [sic] or state objection as New Jersey is unable to aggregate the impact."

Mayor Campbell commented that the listing poses "extraordinary economic hardship" on the municipality and local businesses and places a stigma over the community. As an example, he cited appeals for tax reassessments that are costing the government thousands of dollars in revenue. He specifically noted a reassessment of part of the U.S. Avenue Burn site that reduced the assessed value of the property from

$6,743,300 to $765,100. The Mayor also noted that "[a]s a direct result of Governor Jon S. Corzine's March 9, 2006 letter to EPA concurring with the decision to propose the Hilliards Creek Site for listing on the NPL, negotiations regarding a $30 million redevelopment project, involving the largest single ratable within Gibbsboro, were abruptly terminated." He also claimed that some redevelopment plans had been cancelled and that local businesses were having difficulty renting properties. Mayor Campbell concluded that aggregate impacts exceeded $100 million annually.

In response, EPA presumes that the commenter is referring to Executive Order 12866, which generally subjects "significant regulatory actions" to a review by the Office of Management and Budget (OMB). Executive Order 12866 (58 FR 51735, October 4, 1993) defines "significant regulatory action" as one that is likely to result in a rule that may:

> (1) [h]ave an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
>
> (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
>
> (3) materially alter the budget impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
>
> (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order. [58 FR 51735, October 4, 1993]

EPA has determined that this NPL listing does not require review by OMB under Executive Order 12866. The rationale for this determination was explicitly stated in the April 19, 2006, *Federal Register* notice (71 FR 20051) that proposes the Sherwin-Williams/Hilliards Creek site for listing on the NPL. Per Part IV, Section A.2, *Is This Proposed Rule Subject to Executive Order 12866 Review?* (page 20057) of the April 19, 2006, *Federal Register* notice:

> The listing of sites on the NPL does not impose any obligations on any entities. The listing does not set standards or a regulatory regime and imposes no liability or costs. Any liability under CERCLA exists irrespective of whether a site is listed. It has been determined that this action is not a "significant regulatory action" under the terms of Executive Order 12866 and is therefore not subject to OMB review.

Consistent with this determination, Executive Order 12866 would not be triggered regardless of whether EPA evaluated the Sherwin-Williams/Hilliards Creek site, the Route 561 Dump site, and the U.S. Avenue Burn site together or separately, contrary to the commenter's suggestion that EPA chose to list these sites separately in order to avoid review under Executive Order 12866.

3.9 Impacts of Listing

J&W and Brandywine commented that listing the site will have direct adverse economic impacts and will create a stigma on their property and businesses and the Borough of Gibbsboro. Both acknowledged that the proposed rule does not provide precise geographical boundaries; however, J&W asserted that the "designation of the site unavoidably stigmatizes its property." Similarly, Brandywine stated that the entire Paint Works Corporate Center area will be significantly and unnecessarily affected by the listing.

J&W argued that listing the site in such broad terms was a "serious disservice" to J&W. J&W stated that the unavoidable stigmatization on its company was "particularly unfair" as its property was far removed from paint manufacturing areas, Hilliards Creek, and the seep area; and as the portions of its property located closest to sources at the site have never been developed. J&W stated that this stigmatization was also "particularly unfair as historical soil and ground water sampling by Sherwin-Williams showed that none of the contaminants of concern at the site had ever been discovered on J&W property; with the only exception to this in the past 15 years being an exceedence of methylene chloride, a common laboratory contaminant.

J&W stated that potential business partners in developing its property have already expressed strong reservations about becoming involved with the development effort because of the stigma. J&W also commented that this stigma will make it difficult to find future tenants and financing, and that the stigma will extend to the "entire Borough of Gibbsboro." Brandywine also asserted that listing the site will only complicate the ongoing activities. J&W concluded that EPA should allow the site investigation and remediation to proceed under existing oversight arrangements.

Gibbsboro Mayor Campbell expressed the belief that "the most significant impact of listing the Site on the NPL will be the unnecessary stigmatization of the entire Paint Works Corporate Center property, which is having a severely negative impact on the owners' ability to rent buildings on the Site." He commented that the proposal "has also created significant unease and trepidation among residents and business owners alike." He acknowledged that EPA has taken the position in the past that stigma impacts are not a reason for not listing a site on the NPL when environmental or health impacts justify such listing. He said, however, that this rationale does not apply in this case because Sherwin-Williams is addressing health and environmental concerns.

In response, EPA notes that the Hilliards Creek site is so contaminated, as evidenced by its HRS site score of 50.00, that it is a priority for EPA cleanup. Such priority sites are, under CERCLA, listed on the NPL, and EPA may undertake appropriate response actions to clean up the site. Once cleaned up, the site will be protective of human health and the environment, thus increasing its value over its current condition.

In the meantime, values are diminished because the site remains a risk to human health and the environment. These risks are present regardless of whether or not the site is included on the NPL because of the possibility of exposure to hazardous substances. The commenters suggest that public awareness of these risks creates a "stigma" on local properties. EPA considers that listing the Sherwin-Williams/Hilliards Creek site to the NPL and cleaning up the site are an appropriate response to the risks posed by contamination. EPA expects that any such "stigma" that may result from listing the site to the NPL will be temporary, and that it can be eliminated through further investigation and, if necessary, cleanup. In addition, as indicated in Part I, Section G of the *Federal Register* notice proposing the Sherwin-Williams/Hilliards Creek site on the NPL, "EPA may delete sites from the NPL where no further response is appropriate under Superfund." (71 FR 20052-20059, April 19, 2006).

Regarding J&W's claim that its property is unfairly stigmatized by its vicinity to the sources at the proposed site, and that its property had been sampled and that results showed only a single measurement of methylene chlorine, per HRS Section 1.1, *Definitions*, "site" is defined as "area(s) where a hazardous substance has been deposited, stored, disposed, or placed, or has otherwise come to be located. Such areas may include multiple sources, and may include the area between the sources." The HRS documentation record as proposed identified the site to consist of sources at the Sherwin-Williams/Lucas Paint Works facility as well as releases of hazardous substances including methylene chloride to ground water and surface water and sediment in and adjacent to Hilliards Creek. Unless further investigation

documents that the methylene chloride on the J&W property was a result of a release from the site or that other contamination attributable to the site is found on this property, it will not be considered part of the site in the future. On March 31, 1989 (54 FR 13298), EPA stated:

> HRS scoring and the subsequent listing of a release merely represent the *initial* [emphasis added] determination that a certain area may need to be addressed under CERCLA. Accordingly, EPA contemplates that the preliminary description of facility boundaries at the time of scoring will need to be refined and improved as more information is developed as to where the contamination has come to be located; this refining step generally comes during the RI/FS stage.

As stated above, regardless of whether the J&W property is considered part of the site as proposed, any perceived stigma that may be associated with listing of the site is due to contamination associated with the site and not to the act of listing.

Regarding commenters' suggestion that cleanup should instead continue under Sherwin-Williams's direction as it has to date, EPA addresses the need for listing notwithstanding Sherwin-Williams's actions in section 3.10, *Need for Listing/Consistency with CERCLA and EPA Policy*, of this support document.

3.10 Need for Listing/Consistency with CERCLA and EPA Policy

J&W, Brandywine, and the Mayor of Gibbsboro asserted that there is no need to place the Sherwin-Williams/Hilliards Creek site on the NPL. They stated that the existing oversight arrangements between EPA and Sherwin-Williams and the ongoing investigative and remedial work are adequate to address environmental and public health concerns. They commented that it appears that Sherwin-Williams has been cooperating with EPA and that EPA has not indicated that Sherwin-Williams has been "deficient or unsatisfactory." They also asserted that EPA has failed to demonstrate either a factual or legal necessity for deviating from the present arrangements, and that Sherwin-Williams has demonstrated its willingness and possesses sufficient funds to continue the cooperation. Brandywine and Mayor Campbell concluded "[i]t appears that EPA simply prefers, for unstated reasons, to address the Site as an NPL site, rather than under the existing oversight arrangements."

Brandywine and Mayor Campbell both commented that Sherwin-Williams has sufficient financial resources to accomplish cleanup at the site. The Mayor cited Sherwin-Williams's estimated 2006 revenues (greater than $7.7 billion) and market capitalization "in excess of $7 billion" ($250 million in cash, $850 million in operating cash flow) as evidence of its ability to pay for needed remedial activities. He also argued that, given the "present federal budget climate," Sherwin-Williams is the "only viable source of funding to remediate the Site." The Mayor also asserted that Sherwin-Williams had indicated its responsibility for the site remediation both in official filings with the Securities Exchange Commission (SEC) and in warnings to its stockholders. He commented that all studies and response actions that have been conducted in Gibbsboro have been "fully funded" by Sherwin-Williams. He provided a detailed account of response actions taken by Sherwin-Williams in Gibbsboro since 2000, including studies and actions taken at the "Paint Works site," and the Route 561 Dump, and U.S. Avenue Burn sites, as well as site security activities at all three sites.

Mayor Campbell commented that he sees no advantage "and only further economic damage" by listing the Sherwin-Williams/Hilliards Creek site on the NPL, and proposed that "EPA continue to work with the PRP under the existing Order that includes virtually the same requirements imposed upon the PRP as would exist if the site were, in fact, listed on the NPL." He expressed the opinion that, while it would like to see faster progress, "it is clear that the PRP, Sherwin-Williams, is acting responsibly." The Mayor concluded that, given the purpose of the NPL (i.e., informational purposes, identifying for the States and

the public those sites or other releases that appear to warrant remedial actions), "it is clear that listing on the NPL is not necessary to notify the public that remedial action is warranted." Brandywine also concluded that "it appears that Sherwin-Williams' and EPA's resources will be more effectively employed by maintaining the current course of action . . . instead of unnecessarily stigmatizing the entire Paint Works."

Sherwin-Williams commented, "given Sherwin-Williams' ongoing site activities to investigate and address the Site . . . it is unnecessary and inconsistent with CERCLA and EPA policy for EPA to propose listing of the Site." Sherwin-Williams asserted that Section 105(a) of CERCLA requires EPA to prioritize sites "which pose substantial danger to the public health or the environment," and that the legislative history of this section emphasizes the "overriding principle of the legislation that Superfund should be reserved for the most serious sites not otherwise being addressed." It claimed that the legislative history of this section also makes it clear that the purpose of the NPL is to set priorities for site investigation and remediation where there is no ongoing process to address the site or no private party who is implementing site actions. Sherwin-Williams pointed to several EPA directives that reiterate this position and claimed that EPA has used it as a rationale for deferring NPL consideration for other sites. It claimed that the ongoing effort is well beyond the NPL process, which it describes as designed as an initial screening device, not intended for sites where the investigative process is well underway or completed, or for sites that have viable PRPs who are undertaking or have indicated a willingness to complete site remedial actions. Sherwin-Williams asserted that it is such a PRP, and that it is unnecessary to list the site to achieve the cleanup of the site. Sherwin-Williams stated that it "recognizes its ongoing obligation to complete the RI/FS and that further remedial actions will be required." Sherwin-Williams concluded that it is unnecessary to propose the Site for listing on the NPL to achieve remediation goals. It asserted that "the amount of resources and commitment that Sherwin-Williams has put forth, and the level of cooperation between Sherwin-Williams, EPA and the Borough of Gibbsboro have been very good in the past several years and actions have been progressing apace." Sherwin-Williams further stated that the significant activities conducted by Sherwin-Williams at the site compel a conclusion that a site listing proposal should not be considered.

In response, the addition of the Sherwin-Williams/Hilliards Creek site to the NPL is fully consistent with CERCLA and relevant EPA regulations and guidance. While progress has been made on the remediation of some areas of the site (see, for example, section 3.13, *Source 3 Removal*, of this support document), other sources identified in the HRS documentation record as proposed have not been addressed, and no plans for their final remediation have been agreed upon. Similarly, other than the installation of fencing in an effort to prevent access by the public and operation of a skimming unit in an effort to remove part of the contamination in Hilliards Creek, no effort has been made to address contamination in Hilliards Creek or the downstream wetland, the primary target of contamination identified in the HRS documentation record as proposed.

The State of New Jersey is in full agreement with EPA regarding this issue, as documented in a October 9, 2001, letter from Robert R. Van Fossen, Director, Division of Responsible Party Site Remediation, New Jersey Department of Environmental Protection, to EPA Region 2. (This letter has been added to the site docket at promulgation.) In this letter, New Jersey requested that EPA include the Hilliards Creek site on the NPL. Mr. Van Fossen summarized the history of New Jersey's attempts to work with Sherwin-Williams to clean up the site, including entering into an ACO with Sherwin-Williams to remediate the site. However, Mr. Van Fossen explained that the State had given up on this approach. He wrote that on July 18, 2001, his department had "unilaterally terminated the ACO due to the non-compliance of Sherwin-Williams with the terms and conditions of the ACO agreement." He stated that the issues that remained unresolved included:

- Completion of the Remedial Investigation in accordance with the Department's past comments.

- Conducting/submitting a Remedial Action Proposal/Feasibility Study in accordance with state and federal requirements.

- Implementing a remedial action in accordance with state and federal regulations.

Moreover, the HRS evaluation of the Sherwin-Williams/Hilliards Creek site yielded a site score of 50.00, the highest possible score for evaluation of a single migration pathway and substantially above the 28.50 required for listing, which itself is sufficient to place the site on the NPL.

3.11 Withdraw Listing While Sherwin-Williams Completes Response Actions

Sherwin-Williams asserted that EPA should withdraw the proposed listing while it completes the investigation currently planned under the approved work plan schedule. It claimed that "the actions to date . . . have controlled any significant impact or exposure to human health or the environment," and additionally that EPA recognizes that access or exposure to any significant threats have been mitigated. Sherwin-Williams commented that EPA has not properly represented all of Sherwin-Williams's investigations and response activities or the effects of these actions on its proposed listing, and that the HRS documentation is incomplete in this regard.

Sherwin-Williams also stated that it recognizes its ongoing obligation to complete the RI/FS and that further remedial actions will be necessary. Gibbsboro Mayor Campbell also commented that listing of the site would not expedite the remediation process. He noted that Sherwin-Williams has accepted responsibility for contamination in Hilliards Creek and that Sherwin-Williams has ample financial resources to conduct investigation and cleanup. Sherwin-Williams provided a brief summary of investigation and response activities at the Paint Works facility and in Hilliards Creek. Sherwin-Williams also included with its comments Attachment 1, *Past and Ongoing Site Activities Conducted by Sherwin-Williams*, a detailed presentation of investigations and response activities taken at the site from 1978 to the present. Gibbsboro Mayor Campbell also included a review of Sherwin-Williams's activities in his comments.

In response, the HRS documentation record as proposed is consistent with the HRS and is an accurate reflection of current conditions at the site. The Agency considers the data used to score the Sherwin-Williams site to be adequate and meet the explicit criteria for both the types and quality of information required by the HRS to demonstrate that the site qualifies for placement on the NPL. Specifically, data in the HRS documentation record as proposed related to the association of hazardous substances with the sources at the site, observed releases of hazardous substances from those sources to Hilliards Creek, and the presence of Level I and Level II sensitive environments downstream resulted in an HRS site score of 50.00, substantially above the 28.50 required for listing.

As discussed in section 3.10, *Need for Listing/Consistency with CERCLA and EPA Policy*, of this support document, although progress has been made with respect to the remediation of select areas of the site (see, for example, section 3.13, *Source 3 Removal*, of this support document), other sources identified in the HRS documentation record as proposed have not been addressed, and no plans for their final remediation have been agreed upon. While Sherwin-Williams asserts throughout its comments its good relations with EPA and State of New Jersey personnel, it should be noted that the Agency is listing the Hilliards Creek site at the specific request of Jon S. Corzine, Governor of New Jersey, and that the ACO under which New Jersey was working with Sherwin-Williams was terminated due to noncompliance on the part of Sherwin-Williams to meet the requirements of the ACO (see section 3.10, *Need for Listing/Consistency with CERCLA and EPA Policy*, of this support document). While the Agency

acknowledges Sherwin-Williams's response activities, these activities have spanned a period of more than 20 years, and there has been no substantial attempt to remediate actual releases to either ground water or to surface water other than limited recovery of free product at the Sherwin-Williams facility. Sherwin-Williams's ongoing activities should in no way be impeded by the listing process.

3.12 Analytical Data Quality Issues

Sherwin-Williams stated "[t]he HRS Doc[umentation] Record relies on analytical data: to associate hazardous substances with the sources at the site, to document observed releases to surface water and groundwater downstream/downgradient of the site, and to establish the level of contamination of actual contamination targets," and "[a] number of data quality deficiencies are apparent in the data cited in the HRS Doc[umentation] Record." Sherwin-Williams claimed that the analytical data used to associate hazardous substances with sources and to establish observed releases to surface water and ground water were inadequate.

Sherwin-Williams's specific comments and EPA's responses on individual data quality issues are presented in the following subsections following this introductory discussion:

- 3.12.1 Use of Summary Data Tables
- 3.12.2 Detection Limits
- 3.12.3 Data Validation
- 3.12.4 Use of Qualified Data

In response, EPA considers the quality of the analytical data used in the HRS scoring of this site to be adequate. Analytical data are used for three different purposes as described in the HRS:

- for establishing observed release by chemical analysis to a contaminant transport pathway (see HRS Section 2.3, *Likelihood of release*),

- for establishing observed releases by direct observation to a contaminant transport pathway (see HRS Section 4.1.2.1.1, *Observed release*), and

- for associating hazardous substances with a source (see HRS Section 2.2.2, *Identify hazardous substances associated with a source*).

Depending upon how particular data are used in the HRS scoring for a site, there are different data quality objectives.

For establishing observed release by chemical analysis, the HRS requires a quantitative comparison to background. Per HRS Section 2.3, *Likelihood of release*, one of the following two criteria must be met. The contaminant concentration in the release sample(s) must be either 1) three times above the background concentration for the media being evaluated, or 2) at or above the sample quantitation or detection limit[3] if the background level is below the appropriate detection limit. Therefore, EPA's data quality objective for analytical data used in the identification of an observed release by chemical analysis is that the data must be sufficiently *quantitative* to demonstrate that one of the above two criteria has been met.

For establishing observed release by direct observation, the HRS requires that one or more hazardous substances have been observed entering the media being investigated (see HRS Section 2.3, *Likelihood of*

[3] Depending on if the analysis was performed under the EPA Contract Laboratory Program (CLP).

release). To meet this requirement, EPA provides evidence, usually analytical, that the substance entering the pathway medium (e.g., ground water, air) is present. EPA's data quality objective in this case is that the data demonstrate at least *qualitatively* the presence of the hazardous substance in the release.

For associating a substance with a source, HRS Section 2.2.2, *Identify hazardous substances associated with a source,* states:

> [C]onsider those hazardous substances documented in a source (for example, by sampling, labels, manifests, oral or written statements) to be associated with that source when evaluating each pathway.

The HRS Section 1.1, *Definitions*, defines "source" in part as:

> [a]ny area where a hazardous substance has been deposited, stored, disposed, or placed, plus those soils that have become contaminated from migration of a hazardous substance.

Thus, to associate a hazardous substance with a source, the substance must be documented to be in an area where it was deposited, stored, disposed, or placed, or to be soil contaminated through hazardous substance migration.

For sources that are not composed of contaminated soil, any substance that can be documented as in the waste material in the source can be associated with that source. For samples of waste materials, background sampling is unnecessary, since the presence of the wastes shows evidence that the hazardous substances have been deposited, stored, disposed, or placed in the source.

Therefore, EPA's data quality objective for associating a substance with a source other than contaminated soil based on analytical samples, is that the analytical data document the substance to be present in a sample at a concentration at or above the detection limit. Hence, the analytical data need only be *qualitatively* accurate.

For associating substances with contaminated soil sources, it is necessary to show that the substances being associated with the source are present as a result of hazardous substance migration, and not naturally present nor ubiquitous in the area. This is often demonstrated by establishing a background level of a hazardous substance and comparing that level to the concentration of that substance in a sample of the contaminated soil. If the concentration in the source sample is higher that the background level, then it is reasonable to conclude that the substance migrated to the soil. Thus, for contaminated soil sources, EPA's data quality objective is that the contaminant concentration in the soil source be demonstrated to be above the level found in the background sample(s) to ensure the soil has become contaminated through hazardous substance migration. Thus, the analytical data must be quantitatively accurate.

EPA's Superfund Contract Laboratory Program (CLP) was developed in the early 1980's to provide analytical results of known and documented quality for use in site investigations, HRS scoring, and other Superfund activities. HRS Section 1.1, *Definitions*, identifies the CLP program as an:

> Analytical Program developed for CERCLA waste site samples to fill the need for legally defensible analytical results supported by a high level of quality assurance and documentation.

All samples collected and analyzed in the CLP are collected, shipped, tracked, and analyzed using standard procedures established by EPA to ensure their quality, and the data undergo quality assurance and quality control (QA/QC) review prior to submission to the data user. Prior to sample collection, EPA develops a Sampling and Analysis Plan (SAP) and a Quality Assurance Project Plan (QAPP) that are followed during the site investigation. The CLP methods identify and provide documentation regarding the accuracy and limits of detection for each substance measured by the method. The methods also specify the QA/QC samples required to be collected in the field and/or created in the laboratory. Using these samples, the analytical laboratory reviews the analytical results and documents any concerns regarding the quality of the data. Independently, EPA Regional staff or their contractors review and validate the analytical results and document any issues or concerns. When a substance's reported concentration is qualified due to an analysis issue, EPA identifies the reason the concentration was qualified. Then, based on this information, EPA determines, depending on the data use, if the reported concentration is sufficiently accurate to meet the data quality objective for which the analytical result is being used. These controls typically mean that CLP data, as represented in data summary sheets that provide the analytical results and any assigned qualifiers, when used to support an HRS scoring package, are reliable.

When non-CLP analytical data are used in HRS scoring, EPA typically examines the available analytical results and documentation and decides on a case-by-case basis whether the quality of the analytical results is sufficient to support the applicable HRS purpose (i.e., establishing observed release by chemical analysis, establishing observed release by direct observation, or associating substances with a source). EPA often considers it appropriate to use non-CLP data if the analyses were performed under the procedures for other Federal or State regulatory programs requiring the same level of quality as obtained through the CLP, or if the analytical data were collected under a court order or under a consent order requiring data quality equivalent to that obtained through the CLP. In these situations, the level of data quality documentation required is usually established by the regulator, or the court order or agreement.

This response provides the background for addressing Sherwin-Williams's specific comments regarding data quality deficiencies, as addressed in the following sections.

3.12.1 Use of Summary Data Tables

Sherwin-Williams commented that EPA had used summary data tables to associate hazardous substances with sources, to establish observed releases and level of actual contamination to Hilliards Creek and to establish observed releases to ground water. Sherwin-Williams indicated that these data summary tables are inadequate documentation because data summary tables are a secondary source and not an acceptable reference as they do not contain the information needed to establish data usability. Sherwin-Williams concluded that "[w]ithout adequate references for the data, they cannot be used in the HRS Doc[umentation] Record or to support EPA's NPL proposal."

In response, as noted in section 3.12, *Analytical Data Quality Issues*, of this support document, the quality of the data used for HRS scoring is dependent on the use of the data and the data quality objectives associated with that use. The analytical data sets used for associating substances with sources, and for identifying an observed release to surface water and to ground water are shown in the following table. The table is followed by a discussion of why EPA considers the analytical data associated with each data set to be of sufficient quality for the HRS purpose specified in the table.

HRS Purpose	Analytical Data Sets Used
Association of Substances with Source 1 and Observed Release by Direct Observation to Surface Water	– 2003 sampling by Tetra Tech for EPA – 2002 sampling by Weston for Sherwin-Williams – 1985 and 1987 sampling by NJDEP – Pre-1991 sampling (ranging 1983 to 1991) by Kaselaan & D'Angelo, Inc., for Scarborough – 1991, 1993, 1995, 1996 sampling by Weston for Sherwin-Williams
Association of Substances with Source 2	– 1991 to 1999 sampling by Weston for Sherwin-Williams
Association of Substances with Source 3	– 1977 sampling by Sippel and Masteller Associates, Inc., and Alfred McClymont, P.E., for Sherwin-Williams – 1978 sampling by Geraghty & Miller, Inc., SCA Chemical Services Co., and McClymont Associates for Sherwin-Williams – 1997 sampling by Weston for Sherwin-Williams
Association of Substances with Source 4	– 1991 to 1999 sampling by Weston for Sherwin-Williams
Ground Water Observed Release by Chemical Analysis Documentation	– 1991 to 2000 sampling by Weston for Sherwin-Williams
Surface Water Observed Release by Chemical Analysis Documentation	– 1998 sampling by Tetra Tech for EPA – 2004 sampling by Tetra Tech for EPA

2003 Sampling By Tetra Tech for EPA

EPA used this data set, along with the other data sets listed in the above table, to document substances associated with Source 1, a layer of free-phase product in the subsurface at the site. These analytical data were also used to support the identification of an observed release by direct observation to surface water because the free product was observed leaching and flowing into Hilliards Creek. As cited on page 31 of the HRS documentation record as proposed, these analytical results are presented in References 77 and 79 of the HRS documentation record. In addition, the data validation reports for this data set are contained in References 76 and 78 of the HRS Documentation record as proposed, although these references were not cited. These references present the guidelines used to perform the analyses documented on pages 1 and 2 of these references. Page 2 of each reference contains a table listing the analytical methods used. All the methods used for identifying substances with the site were either EPA RCRA or CLP methods specifically developed for determining quantitatively the concentration of contaminants in environmental media. Page 2 of each reference also states:

> This data package was reviewed in accordance with the U.S. EPA Contract Laboratory Program "National Functional Guidelines for Organic Data Review," October 1999 and

U.S. EPA Contract Laboratory Program "National Functional Guidelines for Inorganic Data Review," July 2002.

Therefore, EPA considers that these data are documented to be, at minimum, qualitatively accurate based on its analysis and quality review to be equivalent to a CLP analysis. Regarding the use of these data to associate substances with a source, given that the data quality objective for associating substance with a source based on sampling is documentation that the substance is present in a source waste (e.g., free-phase product sample) (see section 3.12, *Analytical Data Quality Issues*, of this support document), this data set is usable for the purpose of documenting substances associated with Source 1, unless the data qualifiers assigned during the data validation indicate otherwise (see section 3.12.4, *Use of Qualified Data,* of this support document).

Regarding the use of data in establishing an observed release by direct observation, given that the data quality objective for this purpose is to document the substances were in the free product which in turn was observed entering surface water, the data need only be qualitatively accurate. For the same reasons as discussed above, EPA also considers this data set usable for establishing an observed release by direct observation to surface water, unless the data qualifiers assigned during the data validation indicate otherwise (see section 3.12.4*, Use of Qualified Data*, of this support document).

1991 to 2000 Sampling Events by Weston for Sherwin-Williams

EPA used these Sherwin-Williams data sets for establishing substances associated with sources 1, 2, 3, and 4, and for establishing observed releases to ground water. The data quality objective for associating a substance with a source based on sampling is documentation that the substance is present in a source waste (i.e., qualitatively accurate) (see section 3.12*, Analytical Data Quality Issues*, of this support document). The data quality objective for establishing an observed release by chemical analysis to ground water is that the analytical results be quantitatively accurate (see section 3.12, *Analytical Data Quality Issues*, of this support document). Although the HRS documentation record as proposed cites data summary tables that do not present the detection limits for these sample sets, EPA evaluated the documentation for these data sets at the time of proposal and now has reviewed this evaluation in response to the comments. For the reasons presented below EPA considers the analytical data to be of known and documented quality. EPA considers the data used in the HRS scoring from these data sets to be both qualitatively and quantitatively accurate.

These data were obtained by EPA from Reference 31[4] of the HRS documentation record as proposed, the RI report prepared for Sherwin-Williams by its contractor, Weston. The collection and analysis of the samples were conducted for Sherwin-Williams by Weston under an ACO with NJDEP dated 20 September 1990 (see page ES-1 of Reference 31 of the HRS documentation record as proposed). The purpose of these data was to adequately characterize the Sherwin-Williams Gibbsboro facility to determine the need for remediation and design any remediation activities. As part of the process, work plans and QAPPs were prepared by Sherwin-Williams and approved by NJDEP prior to the initiation of the corresponding field investigations. For example, page 1-4 of the RI report states that the "work was conducted in accordance with the following NJDEP-approved work plans," and lists 6 work plans. These work plans discussed the sampling and analysis procedures for a specific phase of the investigation." (See, for example, Reference 68 of the HRS documentation record as proposed, a Weston-authored and Sherwin-Williams submitted work plan dated November 1999.) In addition to work plans, Reference 111 of the HRS documentation record as proposed provides a subsection of a QAPP used by Weston in performing the effort. The plan provides analytical methods, quantitation limits, and detection limits for

[4] Reference 31 of the HRS documentation record: *Remedial Investigations Report, The Paint Works Corporate Center, Gibbsboro, Camden County, New Jersey, Volume I* (Weston, February 2001).

these investigations conducted by Weston for Sherwin-Williams (Reference 111). (See page 179 of the HRS documentation record as proposed.)

Sherwin-Williams made the following statement regarding its rationale for certifying the quality of the data presented in the RI study (see pages 3-37 and 3-38 of the RI report [Reference 31] of the HRS documentation record as proposed).

> The environmental investigations at the site described in this report span a period of approximately 19 years. However, monitoring wells in AEC IV [area of environmental concern 4] have been sampled since 1988. During this time analytical protocols and methods have been revised and updated. All samples were analyzed following the requirements in effect at the time the work was performed. Table 3-1 summarizes the sampling and analysis program for all phases completed to date.

(Note that Table 3-1 of the RI report lists all samples collected as part of the RI study. It documents that standard quality assurance samples, including trip blanks, field blanks, duplicates and other quality control samples were collected and analyzed as part of the data analysis process.)

> All post-1990 analyses through Phase IV were conducted by Weston Division, a New Jersey-certified laboratory (No. 77192). All Phase V analyses (except "fingerprinting") were conducted by Severn-Trent Laboratories (STL), located in Vernon Hills, IL [Illinois]. STL is a New Jersey-certified laboratory (No. 54003).
> Specialty analyses for the free-phase product identification (fingerprinting) efforts were conducted by: CoreLabs of Houston, Texas, Center for Toxicology and Environmental Health, Little Rock, Arkansas, and STL-Envirotech, Edison, New Jersey.

In section 3.3.1.1, *Data Usability,* of the RI report (Reference 31 of the HRS documentation record as proposed) on page 3-38 Sherwin-Williams discusses the quality of the analytical data.

> These investigations produced data that are useable and of known quality. Weston used field and trip blank samples to monitor equipment decontamination and sample cross-contamination in the field or in transit. Generally, these samples indicated that the integrity of the sample was preserved throughout the collection and shipment process. Duplicate and matrix spike samples were utilized to monitor analytical methodology performance. Generally, the laboratories performed within the prescribed performance criteria for the method used.

In addition, Sherwin-Williams submitted an affidavit on the quality of the analytical data. The RI report (Reference 31 of the HRS documentation record as proposed) provides the following statement on page C-1:

> I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statue, I am personally liable for the penalties.

This statement was signed by Gordon S. Kuntz, Sr. Environmental Project Manager, Roy F. Weston, Inc. (Sherwin-Williams's contractor), on February 1, 2001, and was also signed and notarized by Nancy Torres, Notary.

EPA notes that the Sherwin-Williams's RI report also identifies that the data were subject to validation, as demonstrated in the assignment of B and J data quality qualifiers, which are assigned only during a data quality review, as discussed in section 3.3.1.1 of the RI report (see pages 3-38 and 3-39 of Reference 31 of the HRS documentation record as proposed).

In summary, the Sherwin-Williams data sets from 1991 to 2000 presented in the RI report (Reference 31 of the documentation record as proposed) were collected under an AOC, which required work plans approved by the State of New Jersey, that contained data quality requirements similar to those required by EPA when it performs the data collection and analysis. EPA has identified and presented references supporting that the samples were collected, analyzed, and validated in compliance with these procedures. Therefore, EPA considers the data to be of sufficient quality for quantitative purposes of establishing observed releases by chemical analysis to ground water and qualitative purposes of associating substances with sources, except where the qualifiers assigned to the analysis results specified otherwise (see section 3.12.4, *Use of Qualified Data,* of this support document).

1998 and 2004 Sampling by Tetra Tech for EPA

EPA used these data sets to establish an observed release by chemical analysis to Hilliards Creek. Again, the HRS data quality objective for establishing an observed release by chemical analysis is that the analytical results be *quantitatively* accurate. For the 2004 observed release analytical data, sample collection procedures including field log book notes and a summary of sample analysis and analytical methods can found in Reference 84. Data review and organic and inorganic results can be found in References 81, 84, 85, 86, 87, 88, 90, 91, and 94 of the HRS documentation record as proposed. The 2004 observed release analytical data were analyzed using CLP procedures. The detection limits used were the SQL or the contract-required detection limit or quantitation limit (CRDL or CRQL) as specified in HRS Table 2-3, *Observed Release Criteria for Chemical Analysis*. Page 96 of the HRS documentation record as proposed states, "[a]ll analytical results were validated in accordance with EPA Region 2 'Evaluation of Metals Data for the CLP Program,' and 'CLP Organic Data Review and Preliminary Review' (Reference 85, page15; Reference 86, Standard Operating Procedures Number HW-2)." The data validation report for the 2004 sampling is available in Reference 86 of the HRS documentation record as proposed. For the reasons discussed above in section 3.12, *Analytical Data Quality Issues*, of this support document, the checks and procedures associated with data developed under the CLP program ensure that those data are reliable. Therefore, in this case, these data sets are documented to be quantitatively accurate and adequate for use in establishing observed releases to surface water, unless the qualifiers assigned during the data validation indicate otherwise (see section 3.12.4, *Use of Qualified Data,* of this support document).

For the 1998 analytical data used to support observed release to surface water via overland flow/flood migration, a summary of the sample collection, sample analyses, and data validation review is presented in References 26 and 28 of the HRS documentation record as proposed. The procedures were equivalent to CLP procedures, although the method used is not a standard CLP method. The detection limits for this data set are summarized in Reference 110 of the HRS documentation record (see page 115 of the HRS documentation record as proposed). Therefore, EPA considers these data to be documented as quantitatively accurate and adequate for use in establishing observed releases to surface water, unless the data qualifiers assigned during the data validation indicate otherwise (see section 3.12.4, *Use of Qualified Data*, of this support document).

EPA also notes that while not used in the HRS identification of an observed release to surface water, on pages 141-151 of the HRS documentation record as proposed, EPA presented information on numerous other studies from 1983 forward by the State of New Jersey, Sherwin-Williams, and others that also identified lead contamination in Hilliards Creek downstream of the site sources.

All Other Analytical Data

As identified in the table above, EPA also identified several pre-1991 sampling events and a 2002 sampling event by Weston for Sherwin-Williams used to support associating hazardous substances with Sources 1 and 3 and identifying an observed release by direct observation to Hilliards Creek. These data were presented along with and in support of data from other sampling events (described in this section) to show that the same substances had been found in samples from the sources over a long period of time. If these data sets were removed from the HRS package, the site score would not change as no HRS scoring factor relied exclusively on these data sets.

3.12.2 Detection Limits

Sherwin-Williams asserted that the data summary tables contained in the RI report (Reference 31 of the HRS documentation record as proposed) used to associate hazardous substances with sources and for establishing observed releases do not present detection limits. Sherwin-Williams stated that EPA Quick Reference Fact Sheet, *Establishing an Observed Release* (OSWER Directive 9285.7-20FS, September 1995), states on page 4 that detection limit information is required for all samples, and especially for the background samples where analytes were not detected, to demonstrate that the detection limit of the background sample is less than the concentration of the same substance in the source or release sample.

Sherwin-Williams stated that the observed release to ground water analytical data used generic sample detection limits from a work plan and not sample-specific values from a primary reference. It added that two analytes, benzoic acid and cresol, did not have detection limits in the HRS documentation record. Sherwin-Williams stated that without adequate references for the analytical data, the data cannot be used in the HRS documentation record.

In response, for the reasons discussed below, EPA is confident the analytical results used in the HRS evaluation of this site from the summary data tables in Reference 31 are above detection limits.

The HRS discusses detection limits only in reference to establishing observed release by chemical analysis. As explained in HRS Section 2.3, *Likelihood of release*, and Table 2-3*, Observed Release Criteria for Chemical Analysis*, the SQL is the preferred detection limit used to establish observed releases by chemical analysis. The HRS states:

> If the sample quantitation limit (SQL) cannot be established, determine if there is an observed release as follows:
>
> > If the sample analysis was performed under the EPA Contract Laboratory Program, use the EPA contract-required quantitation limit (CRQL) in place of the SQL.
> >
> > If the sample analysis is not performed under the EPA Contract Laboratory Program, use the detection limit (DL) in place of the SQL.

In addition, the HRS defines "detection limit" in HRS Section 1.1, *Definitions*, as the:

> Lowest amount that can be distinguished from the normal random "noise" of an analytical instrument or method. For HRS purposes, the detection limit used is the

> method detection limit (MDL) or, for real time field instruments, the detection limit of the instrument as used in the field.

(Note that none of the analytical data used in the HRS scoring of the Sherwin-Williams Hilliards Creek site were from field instruments.)

As explained in section 3.12, *Analytical Data Quality Issues*, of this support document, for observed releases by direct observation and for associating hazardous substances with sources, the data quality objective is to establish that the hazardous substance is present at or above the detection limit.

Regarding the observed release data cited in the RI report (Reference 31 of the HRS documentation record as proposed) prepared by Sherwin-Williams's contractor, EPA evaluated an observed release to surface water by direct observation and by chemical analysis. Detection limits for the observed releases by chemical analysis to surface water were presented in the HRS documentation record and were not questioned. Sherwin-Williams's comments also did not directly dispute the observed releases by direct observation. In response to Sherwin-Williams's comments on the detection limits for the ground water observed release data, the HRS documentation record as proposed identifies detection limits for all of the hazardous substances in ground water samples used to document an observed release to ground water by chemical analysis except cresol and benzoic acid. As cited in the observed release data tables on pages 88-122 of the HRS documentation record as proposed, Reference 112, *Fax to Ray Kilmosak, Remedial Project Manager, USEPA, ERRD, NJ Projects. Subject: Sherwin Williams QAAP MDLs* (March 7, 2006), supports the hazardous substance detection limit for the ground water observed release analytical data. This reference lists the "nominal values for quantitation limits" for volatile organic analysis, semivolatile organic analysis, inorganic analysis, a summary of analytical methods, and a field sampling summary from Sherwin-Williams's Quality Assurance Plan. Hence, detection limits, in the form of nominal quantitation limits, are available for most of the analytical data used to evaluate the observed release by chemical analysis to ground water (see pages 179-221 of the HRS documentation record as proposed). In preparing this response, EPA reviewed the nominal detection limits presented in Reference 112 and confirmed that they are the same as the CLP CRQLs for the analytes when using the same methods. Quantitation limits are at or above the method detection limit, given that a substance has to be detected for it to be quantified. Thus, EPA is confident that the analyte concentrations presented in the HRS documentation record are at or above their method detection limits.

In addition, Reference 112 identifies the methods used by Sherwin-Williams to analyze for cresol and benzoic acid. The nominal detection limits for these two substances based on these methods would be 10 and 50 micrograms/L respectively. The concentrations of cresol in background samples were below detection (see pages 188-203 of the HRS documentation record as proposed) and in release samples were 61, 63, and 47 micrograms/L (see pages 216-217 of the HRS documentation record as proposed). The concentration of benzoic acid in background samples was also below detection (see pages 188-203 of the HRS documentation record as proposed), and in release samples at 15,000, 9,400 and 10,000 micrograms/L (see pages 217-218 of the HRS documentation record as proposed). Thus, the concentrations of both cresol and benzoic acid are well above their detection limits. The HRS documentation record has been revised to include the cresol and benzoic acid detection limits. Regardless, since neither substance was used in determining the HRS score for the site, even if EPA removed their identification from the record, it would not alter the HRS score or the listing decision.

Regarding establishing that the source analytical data are at or above the detection limit, while the data summary tables in the RI Report (Reference 31 of the HRS documentation record as proposed) do not list the hazardous substance detection limits, they list analytical data values only for hazardous substances detected above their detection limits. Hazardous substances that were not detected above their detection limits were left as blank entries in the data summary tables, and hazardous substances that were not

analyzed for were flagged with "NA" for not analyzed. (See Tables 4-4, 4-5, 4-9, 5-1, 5-2, and 5-3 of Reference 31 [RI report] of the HRS documentation record as proposed.) The data summary tables also included data qualifiers associated with the analytical data results and, where applicable, qualifiers were also listed in the source analytical data tables in the HRS documentation record as proposed. The data used to associate hazardous substances with Sources 1 through 4 at the site were collected and supplied by Sherwin-Williams. NJDEP also collected sampling data associated with the free-phase product (Source 1) when it became aware that there were seeps discharging to Hilliards Creek; the results from these samples were consistent with the Sherwin-Williams results. EPA finds the source analytical data collected by Sherwin-Williams to be sufficiently reliable to associate hazardous substances with the sources at the site.

In addition, Sherwin-Williams specifically noted that it had examined the data to determine that the detection limits used in its RI report (Reference 31 of the HRS documentation record as proposed) were valid and stated that these data were of sufficient quality for an equivalent use. Section 3.3.1, Data Usability, of Sherwin-Williams's RI report (Reference 31 of the HRS documentation record as proposed) discusses the quality of the analytical data and Sherwin-Williams's review of method detection limits for data contained in the RI report. Page 3-38 of Reference 31 contains the following statement regarding method detection limits:

> In some instances, the method detection limits (MDLs) were elevated. A review of the entire data set, the backup provided by the laboratory, and the field notebooks indicates that this is likely the result of interference when the total contaminant mass present in the sample was elevated. Although this may result in masking of the presence of certain target compounds, usually other lines of evidence (such as field instrument readings, visual observation, presence of TICs [tentatively identified compounds]) were available to the project team to evaluate the overall conditions present at that location. Also, as a rule of thumb, when the MDLs (for organics) were within one order of magnitude of the relevant regulatory standard, it can be assumed that if the compounds were present, they would have been identified, although their concentration could not have been accurately determined (i.e. would have been assigned a J flag). Generally, the occasionally elevated MDLs have not interfered with the overall ability of the project team to characterize areas of concern. [emphasis added]

If the data are sufficient to show areas of concern, the data are sufficient to identify the substances as present.

Regarding the use of detection limits from work plans rather than sample-specific values from a primary reference, the data in question were from Sherwin-Williams's own report. In the RI report (Reference 31 of the documentation record as proposed), Sherwin-Williams verified the data were accurate. If there had been a difference in the detection limits in the work plan for these substances and the sample-specific values, Sherwin-Williams would have taken this into account before it presented the analytical results in the RI report as detected.

In addition, EPA notes that the guidance referenced by Sherwin-Williams, the EPA Quick Reference Fact Sheet, *Establishing an Observed Release,* page 1, states that it is only guidance for establishing an observed release by chemical analysis. Thus, it is not applicable guidance for associating hazardous substances with sources or establishing observed releases by direct observation.

3.12.3 Data Validation

Sherwin-Williams stated that the data used to establish observed releases and associate substances with sources do not contain data validation reports**.** Sherwin-Williams commented that EPA did not follow its direction in the EPA fact sheet, *Using Qualified Data to Document an Observed Release* (July 1994). It commented that the fact sheet states "[d]ata validation is required because data validation checks the usability of the analytical data for the HRS evaluation and identifies the error (bias) present." Sherwin-Williams stated that there is no indication that the data have been validated, and whether the bias of qualified data has been taken into account. Sherwin-Williams concluded that these data cannot be used in the HRS documentation record to support EPA's NPL proposal.

In response, EPA considers the analytical data used to establish observed releases and associate substances with sources sufficiently validated. The analytical data used in the HRS scoring of this site came from a 2004 EPA sampling event, a 1998 EPA sampling event, and from sampling performed as part of a remedial investigation conducted under the direction of Sherwin-Williams under an AOC between Sherwin-Williams and New Jersey.

As shown in the discussion in section 3.12.1, *Use of Data Summary Tables*, of this support document, a data validation report is available for the 2004 surface water observed release data. For the 1998 analytical data used to establish observed releases, these samples were also collected for EPA and were reviewed following the same data quality procedures as if they had been analyzed under the CLP program, including performing a data validation that was cited in the HRS documentation record.

Data in the data summary tables presented in the RI report (Reference 31 of the HRS documentation record as proposed), which were used to document hazardous substances in sources and in ground water at the site, were collected for Sherwin-Williams by its contractors. The RI report shows that the data are reliable. (See sections 3.12, *Analytical Data Quality Issues*, 3.12.1, *Use of Summary Data Tables*, and 3.12.2, *Detection Limits*, of this support document.) Further, the data summary tables provide data qualifiers and, where applicable, the analytical data were reviewed to consider any bias (see section 3.12.4, *Use of Qualified Data,* of this support document).

In summary, analytical data used to establish observed releases and associate substances with sources were collected under requirements that they be of sufficient quality for the corresponding purposes, and they were reviewed and data qualifiers were applied based on the findings of the review. EPA notes that even if the analytical data associated with source waste samples and the observed release analytical data for the 2004 sediment sampling in Hilliards Creek were the only analytical data used in the HRS documentation record to score the site, the site would still score above 28.50 and would still be eligible for NPL listing. (See sections 3.14, *Source Issues*, and 3.15, *Likelihood of Release Issues*, of this support document.)

3.12.4 Use of Qualified Data

Sherwin-Williams asserted that EPA had not accounted for much of the qualified data used in the HRS documentation record. Sherwin-Williams stated that EPA did not follow its direction in the EPA fact sheet, *Using Qualified Data to Document an Observed Release* (July 1994), which calls for adjustment of qualified data concentrations to account for possible bias in qualified data. As an example, Sherwin-Williams pointed to the use of qualified data in associating hazardous substances with Source 1. For Source 1, Sherwin-Williams stated that ethylbenzene (concentration of 11 mg/kg on page 46 of the HRS documentation record) in background Sample TB-58-09 is qualified with a "J," signifying estimated analytical results. It added that since the direction of the bias is unknown, Exhibit 3 of the EPA fact sheet, *Using Qualified Data to Document an Observed Release* (July 1994), indicates that the result

should be multiplied by the ethylbenzene factor of 10, which results in a background concentration of 110 mg/kg. Sherwin-Williams indicated that this flaw is significant because when the adjusted value (110 mg/kg) is compared to the ethylbenzene concentration (98 mg/kg) in Sample TB-54-10, ethylbenzene can no longer be associated with Source 1.

In response, as illustrated below, EPA considered the possible bias in analytical data when using qualified analytical data in the scoring of the site. EPA considers qualified data to be analytical data for which the accuracy has been validated and found to fall outside the strictest performance criteria of the CLP, but the analyses were considered "under control." If the analyses were not considered "under control," the data would be flagged with a "U" and would not be used for HRS purposes. Results that fall outside the CLP performance criteria but are considered "under control" are flagged with a data qualifier such as a "J" for "estimate" and the direction of the bias is stated in the quality assurance review report.

For observed releases by chemical analysis to surface water, EPA used two data sets, from 1998 and 2004, as indicated in the table in section 3-12, *Analytical Data Quality Issues*, of this support document. The HRS documentation record included all associated data qualifiers in the observed release tables in the HRS documentation record. For the 2004 data, as illustrated in Tables 7 through 12 and the associated footnotes on pages 100-114 of the HRS documentation record as proposed, none of the water samples used to establish observed releases were qualified. Some of the analyses of the sediment samples were qualified with a "J". However, the reason for the qualifiers was explained in the footnotes to these tables on page 113 of the HRS documentation record as proposed:

> J Estimated concentration. The arsenic, lead, and SVOCs [semivolatile organic compounds] concentrations were "J" qualified because of [sic] the percent moisture was high (Refs. 86, pp. N-4 and N-5; 90, Attachment 1, p. 7 of 7.). The concentrations are not adjusted due to the data qualifiers because no bias is assigned to samples qualified because the percent moisture is high (Ref. 81).

In this case, the qualifier was assigned to notify the data user that the percent solids of the samples was less than 50% but greater than 10%. Since this finding does not cause a bias in the data analysis, EPA had no bias to account for in using these data.

For the 1998 data presented in Tables 14 and 16 (see pages 116, 131, and 136 of the HRS documentation record as proposed), no qualified data were used in the identification of observed releases to surface water using this sample set.

For observed releases to ground water, J-qualified data were used to establish background levels for benzene, pentachlorophenol, and dichloroethene. As shown in Table 30 of the HRS documentation record as proposed (pages 188-203), EPA considered the bias in these analytical results and projected an adjusted value that took into account the possible bias. This adjustment is explained on page 203 of the HRS documentation record as proposed. Similarly, for the release samples presented in Table 32 of the HRS documentation record as proposed (pages 204-221), EPA also projected an adjusted value for any J-qualified data. EPA then confirmed that the adjusted values met the HRS data requirement for establishing the observed release by chemical analysis (see section 3.12, *Analytical Data Quality Issues*, of this support document).

For associating hazardous substances with sources, EPA used qualified data for all four sources. For Source 1 (composed of free-phase product), as pointed out by the commenter, EPA used qualified data when it identified which substances had elevated concentrations in contaminated soils (see pages 35-48 of the HRS documentation record as proposed). As explained in section 3.1.4.1, *Source 1 Source Type*, of this support document, EPA did not rely only on contaminated soil sample data to associate hazardous

substances with Source 1; it relied also on actual samples of the free-phase product. The soil data were presented to complement the free-phase product data and were obtained from the Sherwin-Williams's RI report (Reference 31 of the HRS documentation record as proposed). In its RI report, Sherwin-Williams did not present information on a possible bias for the qualifier. The HRS does not contain criteria for determining if a substance in soil is elevated, and EPA did not present an explanation for why it considered the J-qualified analyses acceptable for this use. EPA indicated only that the data values were estimated (see page 48 of the HRS documentation record as proposed). However, even if all the qualified soil data were removed from this source description, including the substance discussed by the commenter, ethylbenzene, and naphthalene, these substances would not be dropped from association with this source because other, non-qualified sample data showed that these substances were elevated in other soil samples (e.g., for ethylbenzene see page 42 of the HRS documentation record as proposed; for naphthalene see page 40 of the HRS documentation record as proposed). Also, both substances were found in free-phase product samples as listed on pages 31-32 of the HRS documentation record as proposed.

For Source 2, areas of contaminated soil, the analyses of ethylbenzene, naphthalene, and methylnaphthalene were qualified (see pages 54-58 of the HRS documentation record as proposed). The data were obtained from the RI Report (Reference 31 of the HRS documentation record as proposed), and Sherwin-Williams did not provide an explanation of the qualifier in the RI report. Dropping the qualified analyses from the discussion would not change the site score, although naphthalene and methylnaphthalene would no longer be associated with this source, because neither of these substances were used in assigning the waste characteristics values for the food chain and environmental component of the surface water pathway. Other substances associated with the source had higher values (see pages 157, 167, 228, and 233 of the HRS documentation record as proposed).

For Source 3, lagoons, 1 of 5 sample analyses for butanone, 2 of 5 sample analyses for carbon disulfide, 1 of 5 sample analyses for xylene, 2 of 3 sample analyses for benzoic acid, and 3 of 5 sample analyses for pentachlorophenol used to associate these substances with this source were qualified (see page 65 of the HRS documentation record as proposed). The data were obtained from the RI report (Reference 31 of the HRS documentation record as proposed), and Sherwin-Williams provided no explanation for the qualifier in the RI report. Dropping the qualified analysis would not eliminate the association of these substances with the source, because non-qualified sample analyses confirmed the substances' association with this source (see section 3.14.2, *Association of Substances with Sources*, of this support document.)

For Source 4, contaminated soil associated with Tank Farm B, two sample analyses used to associate trichloroethane with the source were qualified (see pages 71-80 of the HRS documentation record as proposed). These data were obtained from the RI report (Reference 31 of the HRS documentation record as proposed). Sherwin-Williams did not specify a rationale for the qualification in the RI report. However, even if these data were dropped from the source characterization, other non-qualified sample data documented the presence of this substance (see page 71 of the HRS documentation record as proposed).

In summary, EPA considered the possible bias of qualified data in establishing observed releases by chemical analyses at this site. It did not present a rationale for use of qualified data in associating substance with sources. However, if the qualified sample analyses used to associate substances with sources were removed from the package, no change in the site score would result because the substances were also identified using non-qualified data in the same source or in one of the other four sources.

In addition, EPA notes that Sherwin-Williams's example is of a situation in which qualified data were used to associate a hazardous substance with a source; but the 1994 fact sheet, *Using Qualified Data to Document an Observed Release* referenced by Sherwin-Williams, (and the 1996 fact sheet, *Using*

Qualified Data to Document an Observed Release and Observed Contamination, that clarifies the 1994 fact sheet) states on page 1 "[t]his fact sheet does not address using qualified data for identifying hazardous substances in a source."

3.13 Source 3 Removal

Sherwin-Williams asserted that the removal of 8,096 cubic yards of sludge from Source 3 (lagoons) in 1979 (under an Administrative Order "overseen and certified as complete by the New Jersey Department of Environmental Protection") meets the criteria for a "qualifying removal," but was not properly considered for the site. It claimed that all three criteria identified in EPA's 1991 removals fact sheet[5] were met:

- The waste must have been physically removed from the site—Sherwin-Williams asserted that the waste was removed from the site and placed in a landfill in Pennsylvania.

- The removal action must have occurred prior to the cutoff date applicable to the site—Sherwin-Williams asserted that, because the removal action at Source 3 (1979) predated the preliminary assessment (completed in June 1980), it must also have predated the development of the SI work plan for the site. (Sherwin-Williams stated that, because this criterion was met, EPA's subsequent 1997 removal guidance did not apply.)

- The removed waste must have been disposed or destroyed at a facility permitted under RCRA, TSCA or by the Nuclear Regulatory Commission—Sherwin-Williams stated that this criterion had been met, although it acknowledged that the landfill was not a RCRA-permitted landfill. It claimed that the landfill was approved for disposal by the State of Pennsylvania and that this was sufficient since the disposal pre-dated RCRA regulations.

Sherwin-Williams claimed that, while not required by the 1991 fact sheet, subsequent confirmatory sampling was performed and was used to determine that the lagoon sludge had been successfully removed. It specifically argued that the lagoons (Source 3) should not have been considered part of the site due to a qualifying removal.

In response, Source 3, the lagoons, is correctly evaluated as an HRS source, although EPA agrees the original source area has been at least partially remediated. The lagoons were used in the HRS scoring to associate hazardous substances with the site, to estimate the amount of waste that could have been released to the environment, and to identify a PPE of releases to surface water. The preamble to the HRS considers certain removal actions when scoring a site, to increase incentives for rapid response actions at sites. If response actions were not considered, it could cause delay in clean-up of the site. However, such actions are not considered if the amount of the release from a source remaining in the environment and the threat posed by the remaining release after the action has been completed cannot be determined. The preamble to the HRS states that EPA tries "to balance the benefits of considering removal actions in HRS scores . . . while also ensuring that the HRS score reflects any continuing risks at sites where contamination occurred prior to any response action." (55 FR 51568, December 14, 1990). This policy was followed in the evaluation of Source 3.

The impact of the evaluation of the removal at the lagoons on the HRS scoring of this site is such that the lagoons should not be removed from consideration as a source at this site. The lagoons are characterized as a source on pages 61-67 of the HRS documentation record as proposed and according to the directions

[5] EPA's Quick Reference Fact Sheet, The Revised Hazard Ranking System: Evaluating Sites After Waste Removals (Publication 9345.1-03FS, October 1991).

of HRS Section 2.2, *Characterize sources*, and its subsections, and HRS Section 2.4.2, *Hazardous waste quantity*, and its subsections. The lagoons were documented as being in use from 1950 to 1977, and receiving wastewater generated from the paint manufacturing process during this time period. The number and configuration of the lagoons varied over this period. Thus, the lagoons were used to dispose of wastes for 27 years. During that period, releases from the lagoons are known to have occurred, as discussed below. The removal of the lagoons after this period does not address the releases from the lagoons that had previously occurred and the amount of the release remaining in the environment cannot be determined. The hazardous waste quantity associated with the lagoons is unknown but greater than zero (as evaluated in the HRS documentation record as proposed). Even if EPA were to consider the removal in Source 3 adequate and not include Source 3 in the HRS score for this site, the site score would remain unchanged because the assigned pathway hazardous waste quantity value was assigned a minimum of 100 because targets are subject to Level I concentrations. (See HRS Section 2.4.2.2. *Calculation of hazardous waste quantity factor value,* and pages 168, 170-171, and 240 of the HRS documentation record as proposed.)

Sherwin-Williams does not dispute that there were releases from these lagoons to Hilliards Creek (see page 61 of the HRS documentation record as proposed). Aerial photography showed the presence of a pipeline from one of the lagoons directly to Hilliards Creek. (See Reference 7, *Aerial Photographic Site Analysis, Gibbsboro, New Jersey*, June 1997, of the HRS documentation record as proposed.) Other references identify overflows or leaks from the lagoons to Hilliards Creek in 1975 and 1976. (See additional aerial photographs from Reference 7 and Reference 32, *Directive and Notice to Insurers, in the Matter of the Sherwin-Williams Company Site and the Sherwin-Williams Company; The Paint Works Corporate Associates I; and Robert K. Scarborough [Respondents]*, January 31, 1990, of the HRS documentation record as proposed.)

The "confirmatory samples" discussed by Sherwin-Williams actually document a plethora of hazardous substances in the soil samples taken immediately below the lagoons and in the material used to backfill the lagoons following the removal action, including pentachlorophenol (PCP) at levels above cleanup criteria (see page 65 of the HRS documentation record as proposed.) These hazardous substances associated with the lagoons are eligible for consideration as part of the waste characteristics at the site. Moreover, even if EPA were to consider the removal in Source 3 adequate and not include Source 3 in the HRS score for this site, the site score would remain unchanged because, except for benzoic acid and carbon disulfide, the other hazardous substances associated with Source 3 were also found in other sources at the site and neither benzoic acid nor carbon disulfide are the substances scoring the highest toxicity/mobility and toxicity/mobility/bioaccumulation waste characteristics component. (See pages 64-65, 153-154, 157-158, 161, 163-164, 166-167, 169, 224-225, 227, 232-236, and 238 of the HRS documentation record as proposed.)

That the lagoons were not contained to prevent migration of hazardous substances to ground water or surface water is discussed on page 63 or the HRS documentation record as proposed and is also not disputed by Sherwin-Williams. The hazardous substances associated with the lagoons were documented based on analysis of the wastewater sludge and paint sludge in the lagoons, and in a leachate sample from the lagoons (see page 64 of the HRS documentation record as proposed).

The waste quantity assigned to Source 3 was unknown but greater than zero. This assignment was not based on the size of the lagoon or the waste in the lagoons at the time the lagoons were backfilled. The basis for this assignment is presented on page 67 of the HRS documentation record as proposed. The HRS documentation record explains that the soil samples taken beneath the former location of the lagoons document that some amount of hazardous substances is still present, but that there is insufficient information available to make an accurate quantification; thus, the hazardous waste quantity value

assigned for the source was "greater than zero." Hence, as stated above, even if Source 3 were removed from consideration in the site score, the pathway hazardous waste quantity would remain unchanged.

Furthermore, Sherwin-Williams is only partially accurate in its description of EPA's policy regarding consideration of removals in HRS scoring. The basis for the 1991 fact sheet was the preamble to the HRS rule (see Preamble Section Q, 55 FR 51568, December 14, 1990.) The preamble discusses consideration of such removal actions in the assignment of HRS scores. According to Section Q of the preamble, EPA will calculate waste quantities based on "current conditions," which may differ from initial conditions as the result of a response action. It cited three criteria EPA would use in making this determination. However, Sherwin-Williams failed to note that the preamble also states that this approach must ensure that "the HRS score reflects any continuing risk at sites where contamination occurred prior to any response action" and that "the accuracy of this approach depends on being able to determine with reasonable confidence the quantity of hazardous constituents remaining in sources at the site and the quantity released to the environment. As a consequence, where the Agency does not have sufficient information to estimate the quantity of hazardous constituents remaining in the sources at the site and in the associated releases, a minimum factor value may be assigned to the hazardous waste quantity factor value." The preamble further states that "removal actions may not reduce waste quantity factor values unless the quantity of hazardous constituents remaining in sources and in releases can be estimated with reasonable confidence," and that "parties undertaking removal actions will have primary responsibility for collecting any data needed to support a determination of the quantity of hazardous constituents remaining." Thus, the parties arguing for a change in HRS score must provide the information to support such a score change.

As discussed above, Sherwin-Williams does not dispute the facts that the lagoons were in operation for 27 years, that sludge was in the lagoons until the removal action was taken in 1979, and that releases of hazardous substances from the lagoons occurred during this period. EPA does not agree that the removal is qualifying based on the criteria Sherwin-Williams claimed to have met. Additionally, EPA does not agree that the removal met EPA criteria as protective of human health or the environment based on the limited sampling, which actually showed PCP in soils adjacent to the lagoons present above cleanup criteria. Sherwin-Williams did not suggest a value for the amount of hazardous substances remaining in the environment. The sludge was removed based on visual observation only. In addition, lead is one of the hazardous substances associated with the lagoons, and given the history of direct releases from the lagoons to Hilliards Creek noted above, it is clear that at least part of the lead at observed release levels in Hilliards Creek came from the lagoons. Finally, the landfill to which waste was removed was not a licensed landfill under any of the Federal programs identified in the removal policy or the preamble to the HRS, nor did Sherwin-Williams attempt to show it would have met any such license criteria today.

Sherwin-Williams's comments have no impact on the site score. It should be noted that the inclusion of Source 3 in the HRS evaluation of the Sherwin-Williams/Hilliards Creek site does not contribute materially to the site HRS score; the site would still score the same if Source 3 were removed. This is because the substances used to evaluate waste characteristics at Source 3 were present in other sources at the site. Also, as noted by Sherwin-Williams, hazardous waste quantity was simply evaluated as greater than zero. For a discussion of EPA's evaluation of hazardous waste quantity for individual sources at the Sherwin-Williams/Hilliards Creek site and the site as a whole, in a manner that is consistent with and dictated by the HRS, see section 3.14.4, *Source Hazardous Waste Quantity,* of this support document.

3.14 Source Issues

Commenters raised a number of issues related to the characterization of individual sources in the HRS documentation record as proposed. This support document addresses commenters' specific issues in the following sections:

- Source Type (section 3.14.1 of this support document and its subsections)
- Association of Substances with Sources (section 3.14.2 of this support document and its subsections)
- Source Hazardous Waste Quantity (section 3.14.3 of this support document)
- Source containment (section 3.14.4 of this support document).

3.14.1 Source Type

Sherwin-Williams stated that EPA had assigned the wrong source type to two sources and that this affects the "containment and hazardous waste quantity factor calculations, as well as the need for background soil samples to associate hazardous substances with the sources."

3.14.1.1 Source 1 Source Type

Sherwin-Williams asserted that the source type for Source 1, free-phase product floating atop the water table, should be "contaminated soil" rather than "other." It claimed that Source 1 "is an area of soil where EPA determined hazardous substances contained in the free-product floating on the top of the water table have accumulated following leaks and spills from a variety of sources." Sherwin-Williams stated that this situation "clearly matches the description of a 'Contaminated Soil' source type, included in Highlight 4-1 of the Hazard Ranking System Guidance Manual." Sherwin-Williams commented that the Guidance Manual stresses method of deposition and claimed that, "[u]nlike other sources, contaminated soil is not intended to be a waste management unit and is often formed by migration, deposition, or spills of waste."

In response, the identification of Source 1 as source type "other" is appropriate and consistent with the HRS. An HRS evaluation uses source type to determine the hazardous waste quantity value for individual sources (see HRS Section 2.4.2.1, *Source hazardous waste quantity*, and its subsections). The HRS source types are listed in HRS Table 2-5, *Hazardous Waste Quantity Evaluation Equations,* for use in the ground water and surface water pathway evaluations. HRS Section 2.4.2.1, *Source hazardous waste quantity*, and its subsections contain the instructions for this evaluation. EPA assigns the most appropriate source type for the source being evaluated from those listed in HRS Table 2-5, *Hazardous Waste Quantity Evaluation Equations*. Of the source types listed in HRS Table 2-5[6], source type "other" is most representative of the free-phase product evaluated as Source 1. (See HRS Section 2.4.1.1.3, *Volume*.)

Page 21 of the HRS documentation record as proposed states regarding Source 1 "[t]his source includes free-phase product in ground water underlying the former Lucas Plant…" and states that the free-phase product has been characterized by the collection of product samples and soil samples. Page 22 further states "[t]he free-phase product plume in ground water near Buildings 50 and 67 was initially identified in 1983 when an oily substance was observed in the parking lot between former Buildings 50 (currently a police station) and 67 (also known as the Academy Paints Building). The oily substance flowed overland to a storm water catch basin in the parking lot, then into a storm sewer that discharged into Hilliards Creek. . . . . The product was observed on many occasions during construction of the corporate center that now occupies the former Lucas plant. . . ." This information is supported by Reference 32, page 5, and Reference 65, pages 1-3, which are cited in the HRS documentation record as proposed. The HRS documentation record continues with discussions of observations and investigations which help characterize Source 1. In some instances, Source 1 is described as "seep areas" referring to "the locations

[6] Source types listed in HRS Table 2-5 are: Landfill, Surface Impoundment, Surface Impoundment (buried/backfilled), Drums, Tanks and containers other than drums, Contaminated Soil, Pile, and Other.

where free-phase product was observed at the ground surface or in on-site monitoring wells." (See page 24 of the HRS documentation record as proposed.)

The discovery of free-phase product at the site is also noted in Reference 31, *Remedial Investigations Report, The Paint Works Corporate Center, Gibbsboro, Camden County, New Jersey*, February 2001, of the HRS documentation record as proposed. The RI report states, "[i]n 1994, free-phase product began to enter a storm sewer located in the former Academy Paints parking lot Seep Area . . . It appeared that during times of high water table, free-phase product present at the water table interface entered the storm sewer system" (Reference 31, p. 3-22). The RI report also notes that for monitoring wells installed during Phase II of the RI, "[t]he well screen for each well point was set to straddle the water table, so that free-phase product could be monitored" (Reference 31, p. 3-16). Section 6.1.1 of the RI report states that thickness of the free-phase product in monitoring wells at the site ranged from a sheen to more than 2 feet. The RI report estimated the "true" thickness (based on bail-down tests) as between 0.22 feet and 0.42 feet "with most of the estimated concentrations in the upper end of the range." In other words, samples used to characterize Source 1 were neither contaminated ground water samples nor contaminated soil samples. Rather, they were samples of free-phase product taken from the monitoring wells. Subsequently, a free-phase product recovery/soil vapor extraction (FPR/SVE) system was installed. As discussed on page 29 of the HRS documentation record as proposed, "[a]s of June 30, 2002, the FPR system recovered approximately 44,785 gallons of product and/or water . . . Approximately 8,275 gallons of this total volume collected is primarily product from the product recovery tank." These efforts are described in detail in the description of Source 1 in the HRS documentation record as proposed (Reference 31 [RI report], and Reference 48, *Free-Phase Product Recovery System, Final Progress Report No. 16, the Paint Works Corporate Center, Gibbsboro, New Jersey*, October 11, 2002).

Based on this information, EPA examined the HRS source types listed in HRS Table 2-5, *Hazardous Waste Quantity Evaluation Equations*. The free-phase product source (Source 1) falls within the category of a "other" source type; it is not a landfill, surface impoundment, surface impoundment (buried/backfilled), drums, tanks and containers other than drums, contaminated soil, or pile. Table 2-5 does not contain a free-phase product source type. Therefore, EPA appropriately characterized Source 1 as source type "other."

EPA disagrees with Sherwin-Williams's assertion that EPA's characterization of this source is inconsistent with the HRS Guidance Manual. Page 42 of the HRS Guidance Manual, providing source type definitions, defines "other" as:

> [a] source type used when defined sources do not apply. Examples include: contaminated buildings, storm drains, dry wells, injection wells, and French drains. 'Other' also can be used for ground water plumes and sediments with no identified source.

Alternatively, the HRS Guidance Manual definition of "contaminated soil" is:

> [s]oil onto which available evidence indicates a hazardous substance was spilled, spread, disposed, or deposited.

As noted above, samples used to characterize Source 1 consisted of free-phase product taken from monitoring wells at the site. The soil that has become contaminated by this free-phase product migrating through subsurface soil and seeping onto surface soil could have been considered a separate source.

3.14.1.2 Source 3 Source Type

Sherwin-Williams asserted that Source 3, identified as lagoons and designated surface impoundments, should also be identified as a contaminated soil source "due to a qualifying removal." It claimed that the lagoons were removed, that the samples used to characterize the source were soil samples, and that three of the five soil samples were from below the former lagoons, and the other two were from backfilled soil.

In response, EPA correctly characterized Source 3 as a backfilled surface impoundment to reflect the function of the source during the period from 1950 to 1977 when the lagoons were active (see page 61 of the HRS documentation record as proposed).

An HRS evaluation uses source type to determine the hazardous waste quantity value for individual sources. HRS Section 2.4.2.1, *Source hazardous waste quantity*, and its subsections contain the instructions for this evaluation. The source types are listed in HRS Table 2-5, *Hazardous Waste Quantity Evaluation Equations*. The HRS provides no specific definitions of either surface impoundment or backfilled surface impoundment.

While EPA agrees that today the lagoons are backfilled and/or removed, to characterize the source as contaminated soil would not accurately reflect the role of this source in contributing contamination to Hilliards Creek. During the operation of the lagoons, at least three discharges to Hilliards Creek were documented (see page 61 of the HRS documentation record as proposed), including the direct discharge of liquid wastes from this source prior to backfilling as documented in Reference 7, *Aerial Photographic Site Analysis, Gibbsboro, New Jersey*, June 1997, to the HRS documentation record as proposed.

Furthermore, as discussed in section 3.13, *Source 3 Removal*, of this support document, the response actions taken by Sherwin-Williams at this source are not consistent with the requirements for a qualifying removal as articulated in Section Q, *Consideration of Removal Actions [Current Versus Initial Conditions],* of the preamble to the revised HRS rule (55 FR 51567, December 14, 1990).

The collection of soil samples below the historical bottom of the impoundments and in the materials used to fill the lagoons during the 1996 RI was undertaken to determine whether the remediation of the source in 1979 was effective. (See the discussion of waste characteristics on page 63 of the HRS documentation record as proposed.) The results from this sampling event are displayed in Table 4-7 of Reference 31 (*Remedial Investigations Report, The Paint Works Corporate Center, Gibbsboro, New Jersey, Volume 1*, February 2001) to the HRS documentation record as proposed and indicate the presence of a variety of organic and inorganic contaminants in these samples both above and below the original bottoms of the lagoons as late as 1996.

Sherwin-Williams's comments regarding the source types affect three aspects of the HRS scoring of the Hilliards Creek site: containment, hazardous waste quantity, and the association of hazardous substances with a source.

Containment for Sources 1 and 3 is discussed on pages 25 and 63 of the HRS documentation record as proposed. Migration of hazardous substances has been documented from both sources. Further, Source 1 does not have a liner, a maintained engineered cover, or functioning and maintained run-on control system and runoff management system. Source 3 is also unlined and does not have a surface water runoff control system. This warrants an assigned containment factor value of 10 for each source, as specified in HRS Tables 3-2 and 4-2. According to HRS Section 2.2.3, *Identify hazardous substances available to a pathway*, the hazardous substances associated with these sources are available to migrate from the sources to the pathway because the sources have a containment factor value greater than zero. (See also HRS Sections 3.1.2.1 and 4.1.2.1.2.1.1, both titled *Containment,* for ground water to surface water component

and the surface water overland flow component, respectively, and section 3.14.4, *Source Containment*, of this support document).

Hazardous waste quantity was evaluated as "greater than zero" for each of the sources at the Sherwin-Williams/Hilliards Creek site because contamination was documented as being present but insufficient information was available to establish a precise quantitative value. Hazardous waste quantity for these sources is discussed in more detail in section 3.14.3, *Source Hazardous Waste Quantity,* of this support document. Further, the surface water pathway hazardous waste quantity is assigned a value of 100 in the HRS documentation record as proposed because actually contaminated targets are subjected to Level I and Level II concentrations (see HRS Section 2.4.2.2, *Calculation of hazardous waste quantity factor value*, and pages 155, 160, 168, 226, 230, and 237 of the HRS documentation record as proposed). Hence, Sherwin-Williams's comment on the source waste quantity or removal of Source 3 from the HRS evaluation would not affect the assigned surface water pathway hazardous waste quantity for this site.

The association of hazardous substances with a source is addressed below in section 3.14.2, *Association of Substances with Sources,* of this support document.

Overall, Sherwin-Williams's comment on source type does not impact the assigned values for source containment, source hazardous waste quantity, or the association of hazardous substances with the source such that the overall site score would be changed. Considering these comments, the site score remains 50.00, well above the NPL cutoff of 28.50.

3.14.2 Association of Substances with Sources

Sherwin-Williams stated that the association of hazardous substances with sources and, thus, attribution of the releases of hazardous substances to the site, relies solely on chemical analytical data that have a number of deficiencies. Sherwin-Williams's specific issues and EPA's responses are addressed in the following sections:

- Source Analytical Data Quality (section 3.14.2.1 of this support document)
- Availability of Source Sample Analysis Reference Material and Accuracy of Reference Citations (section 3.14.2.2 of this support document)
- Need for Source Background Samples (section 3.14.2.3 of this support document)
- Multiple Uses of a Sample (section 3.14.2.4 of this support document)
- Sample Similarity (section 3.14.2.5 of this support document).

In response, the association of substances with the four sources is sufficiently justified according to the HRS. The HRS provides specific standards for associating hazardous substances with a source. HRS Section 2.2.1, *Identify sources*, states, "[f]or the three migration pathways, identify the sources at the site that contain hazardous substances." HRS Section 2.2.2, *Identify hazardous substances associated with a source*, states, "[f]or each of the three migration pathways, consider those substances documented in a source (for example, by sampling, labels, manifests, oral or written statements) to be associated with that source when evaluating each pathway."

The HRS contains no requirements for identifying source background samples or the need for similarity of the background samples to source samples for associating hazardous substances with sources. Demonstrating that hazardous substance levels in soil sources (or sources commingled with soil) are above background levels for naturally occurring or ubiquitous substances is sufficient to show association of substances with soil sources.

The following subsections of this support document discuss in detail Sherwin-Williams's comments on the association of hazardous substances with sources.

3.14.2.1 Source Analytical Data Quality

Sherwin-Williams questioned the adequacy of the documentation supporting the quality of the sample analyses used in the association of substances with sources. Sherwin-Williams commented that the source analytical data do not have data validation reports. It stated that data summary tables are referenced in the HRS documentation record, and there is no indication that the data have been validated and whether the bias of qualified data has been taken into account. Sherwin-Williams concluded that these data cannot be used in the HRS documentation record to support EPA's NPL proposal. Sherwin-Williams specifically referenced the 1994 EPA fact sheet, *Using Qualified Data to Document an Observed Release*, in support of these comments.

In response, the quality of the analytical data used in the association of hazardous substances with the site sources is adequate. The only data quality requirement to associate hazardous substances with sources is that the data are of sufficient quality to demonstrate that contamination is present in the source. As explained in section 3.12, *Analytical Data Quality Issues*, of this support document, the data used for this purpose came from the RI study report performed by Weston for Sherwin-Williams and submitted by Sherwin-Williams under an AOC with the State of New Jersey. This report was submitted to characterize the contamination at the site. Moreover, this report includes a statement that the data are of adequate quality for the purpose of evaluating the site. EPA considers this sufficient documentation to justify the use of the data for HRS scoring purposes, and sufficient to address Sherwin-Williams's comments on the adequacy of its own data.

Regarding the consideration of the bias associated with source analytical data qualified during the analysis and validation of the data, EPA did not consider there to be any bias associated with the source analytical data used in its HRS evaluation. The source analytical data flagged "J" as estimated were not identified to be biased. These data are from Sherwin-Williams's RI (Reference 31 of the HRS documentation record as proposed). In its RI report, Sherwin-Williams did not present information on a possible bias for the qualifier. However, the RI report stated, "In some instances, the method detection limits (MDLs) were elevated. . . [W]hen the MDLs (for organics) were within one order of magnitude of the relevant regulatory standard, it can be assumed that if the compounds were present, they would have been identified, although their concentration could not have been accurately determined (i.e., would have been assigned a J flag). Generally, the occasionally elevated MDLs have not interfered with the overall ability of the project team to characterize areas of concern. Thus, the presence of the substances in the samples was not in doubt. Regarding Sherwin-Williams's reference to the EPA fact sheet, *Using Qualified Data to Document an Observed Release and Observed Contamination* (EPA, 1996*),* this fact sheet is not applicable to the source analytical data in the HRS documentation record as proposed. The fact sheet states on page 1, "This factsheet does not address using qualified data for identifying hazardous substances in a source." Additionally, the fact sheet states on page 4, "The adjustment factors only apply to biased 'J' qualified data, not to other 'J' qualified data." On either point, the fact sheet does not apply to the J qualified source data in the HRS documentation record. However, even if EPA were to adjust the

J qualified source data according to the recommendations of the EPA fact sheet[7], the site score would remain unchanged[8] and the site would still qualify for listing on the NPL.

See section 3.12.4, *Use of Qualified Data,* of this support document for further discussion on the use of biased data for HRS evaluations.

3.14.2.2 Availability of Source Sample Analysis Reference Material and Accuracy of Reference Citations

Availability of Reference Material

Sherwin-Williams stated that the reference submitted to support source data on pages 85-90 of the HRS documentation record is incomplete or does not support the statements regarding hazardous substance concentrations in samples cited in the HRS documentation record. Sherwin-Williams stated the following:

- The results of 15 of 54 sample results in Table 3 of the HRS documentation record are unsupported by Reference 51, which is cited for support.
- The electronic copy of Table 4-c of Reference 51 contains only half sheet copies, and the hard copy of Reference 51 is missing pages 3, 5, 6 through 9, and 12 through 14 of Table 4c. Similar issues are noted with Reference 31, Figures 2-4 and 3-2, which are used to support source and ground water sample locations but are not included in the electronic or hard copy reference packages provided to Sherwin-Williams.

In response, EPA considers Reference 51 adequate to support the source data in question. The analytical data in Tables 3 and 4 on pages 85-90 of the HRS documentation record as proposed are concentrations of lead in surface and subsurface soil samples collected from the flood plain of Hilliards Creek. This lead-contaminated soil surrounding Hilliards Creek is listed as an "Other Source" on page 83 of the HRS documentation record as proposed but is not used as part of the HRS site score. Therefore, even if these data were removed, it would not affect the HRS score for this site.

Table 4-c of Reference 51 contains metals analytical data results for soil samples from separate investigations conducted by Sherwin-Williams. Each set of analytical results is given its own numbering sequence within the table (i.e., 10 of 10 pages, 10 of 10 pages, 14 of 14 pages, and 11 of 11 pages) with a total of 45 pages for Table 4-c in Reference 51. EPA notes that none of the pages in Table 4-c of Reference 51 was missing in the hard copy of this reference in the HRS package. EPA also notes that lead is the only hazardous substance on pages 85-90 of the HRS documentation record citing Table 4-c of Reference 51. All the cited pages of Table 4-c were located, and the results listed in the HRS documentation record from this table were visually verified.

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[7] According to the EPA fact sheet, *Using Qualified Data to Document an Observed Release and Observed Contamination* (EPA, 1996), for background sample data with unknown bias, the hazardous substance concentration should be multiplied by the adjustment factor listed in Table 2, 3, or 4; and for the release sample data with unknown bias, the hazardous substance concentration should be divided by the adjustment factor listed in Table 2, 3, or 4 of the fact sheet.

[8] In this scenario, ethylbenzene would no longer be associated with Sample TB-54-10 or TB-56-13 in Source 1 (see page 46, 47 of the HRS documentation record as proposed); ethylbenzene would no longer be associated with Sample TB-59-01 in Source 2 (see page 57 of the HRS documentation record as proposed). However, ethylbenzene is identified in other non-qualified source data (see pages 31-78 of the HRS documentation record as proposed).

Regarding Figures 2-4 and 3-2 of Reference 31, these maps were prepared and compiled by Roy F. Weston, Inc., Sherwin-Williams's contractor, as part of the RI. These figures are not part of the electronic copy of Reference 31 because the file size would have been too large to contain as part of the electronic record. As explained in section 3.3, *Docket Material*, of this HRS support document, Sherwin-Williams had access to a hard copy of oversized maps as a hard copy was available in the docket upon request. Additionally, since the RI report (Reference 31 to the HRS documentation record as proposed) was prepared for Sherwin-Williams by its contractor, Sherwin-Williams easily could have obtained the maps from its contractor or used its own copies, if they were not in the materials provided by EPA.

Adequacy of Reference Citations

Sherwin-Williams commented that data cited in the HRS documentation record contain over 100 incorrect reference citations. It provided the following example:

- Page 41 of the HRS documentation record cites Reference 31, page 2 of Table 4-5 for VOC analytical results for Sample 012-B002[9], but that VOC information is not located on that page.

Sherwin-Williams also commented that incorrect reference citations also included data in the HRS documentation record that were found to be different from the cited page of the cited reference. It explained that there are 25 occurrences of these types of incorrect reference citations. Sherwin-Williams provided the following example:

- Page 47 of the HRS documentation record as proposed cited Reference 31 (RI report) for naphthalene concentrations in background Sample TB-58-09. Naphthalene concentration is listed as "ND" (not detected) in the HRS documentation record, but page 13 in Table 4-5 of Reference 31 lists naphthalene concentration as 21 mg/kg in Sample TB-58-09. Sherwin-Williams then stated that naphthalene cannot be associated with Source 1 because the concentration of naphthalene in the source sample is not at least three times the concentration in background sample TB-58-09.

Sherwin-Williams concluded that all statements of fact must be referenced, and, thus, incorrectly referenced data cannot be used to evaluate the site.

In response, EPA's responses to the specific examples of Source 1 hazardous substances disputed by Sherwin-Williams are as follows:

- Page 41 of the HRS documentation record as proposed cites Reference 31 (RI report) for volatile organic compound (VOC) analyses in Sample 012-B002[10]. Specific pages listed for Reference 31 are Table 4-5 (pages 2 and 9), page 3-7, and Figure 3-2. The HRS documentation record as proposed correctly cited pages 2 and 9 of Table 4-5 in Reference 31 for the analytical data for sample 012-B002. Table 4-5 of Reference 31 contains a total of 27 pages that are consecutively handwritten at the bottom center of the page. While Sherwin-Williams disputed the appropriateness of citing page 2 of Table 4-5 in Reference 31, it failed to realize that the page

[9] EPA notes that page 41 of the HRS documentation record incorrectly lists sample ID 012-B001 collected at MW-12 location at a depth of 6 to 8 feet below ground surface (bgs). The correct sample ID should be 012-B002 collected at MW-12 location at a depth of 6 to 8 feet bgs. This correction was made in the documentation record.

[10] EPA notes that page 41 of the HRS documentation record incorrectly lists sample ID 012-B001, collected at MW-12 location at a depth of 6 to 8 feet below ground surface (bgs). The correct sample ID should be 012-B002, collected at MW-12 location at a depth of 6 to 8 feet bgs. This correction was made in the documentation record.

numbering used for citation from Table 4-5 is the handwritten consecutive page numbers in the bottom center of the page, not the typed page numbers in the lower right corner of the page. The VOC data for sample 012-B002 is located in the seventh column on page 2 of Table 4-5 and in the sixth column on page 9 in Table 4-5 of Reference 31.

- EPA further notes that page 41 of the HRS documentation record also lists VOC data for sample ID 001-B002 (collected at sample location TB-01 at a depth of 10 to 12 ft bgs) and cites Reference 31 Table 4-5 page 1; sample ID 002-B002 (collected at sample location TB-02 at a depth of 0 to 2 ft bgs) and cites Reference 31 Table 4-5 pages 1 and 10; and sample ID 012-B001 (collected at sample location MW-12 at a depth of 0 to 2 ft bgs) and cites Reference 31 Table 4-5 pages 2 and 9. For each of the citations in the HRS documentation record for Table 4-5 of Reference 31, the consecutive handwritten page numbers in the bottom center of the page are correct to locate the data cited from that table.

- Page 47 of the HRS documentation record as proposed lists naphthalene concentration in Sample TB-58 (TB-58-09) as "ND" for not detected and cited page 13 of Table 4-5 in Reference 31. Sherwin-Williams is correct that naphthalene was detected at a concentration of 21 mg/kg in Sample TB-58 (TB-58-09), and the HRS documentation record incorrectly listed it as not detected.

As commented on by Sherwin-Williams and explained above, the HRS documentation record has an error on page 47. It incorrectly lists naphthalene as ND, not detected, in sample TB 58-09. The correct concentration in this sample is 21 mg/kg as listed on page 13 of Table 4-5 in Reference 31. The effect of this error is that naphthalene is no longer three times background in samples TB-55 (TB-55-10.5) and TB-56 (TB-56-1)] on page 47 of the HRS documentation record as proposed. The HRS documentation record has been revised to correct this error. However, this error has no effect on the site score because naphthalene is still associated with Source 1 in other source sample data.

3.14.2.3 Need for Source Background Samples

Sherwin-Williams stated that background samples were needed for all four sources used in the HRS scoring since EPA determined that each of the sources contained soil. Sherwin-Williams asserted that the majority of the source samples included in the HRS documentation record failed to include a background sample, and that "[t]his is important since lead occurs naturally in the environment." Sherwin-Williams provided specific comments on this issue regarding Sources 1, 3, and 4.

In response, the HRS documentation record as proposed presented background levels where appropriate to characterize sources at the Sherwin-Williams/Hilliards Creek site. (See section 3.12, *Analytical Data Quality Issues*, of this support document.) For two of the sources (Sources 1 and 3) background levels are not required. These two sources are not contaminated soil sources, nor do they contain waste mixed with soil but rather are a free-phase product source, which is classified as source type "other" (Source 1), and a lagoon, which is classified as source type "backfilled surface impoundment" (Source 3). At least some of the samples used to associate hazardous substances with these sources were waste samples rather than soil samples, and background samples are not needed to associate hazardous substances with a source when waste samples are used (see pages 21-48 and 61-65 of the HRS documentation record as proposed). (See section 3.14.1, *Source Type*, in this support document for a detailed discussion of source characterization of these two sources.) For further discussion of Sources 1 and 3, see below.

Regarding Sources 2 and 4, these two sources are contaminated soil sources and soil background levels are presented on pages 51-58 and 68-80 of the HRS documentation record as proposed. For hazardous substances associated with these two soil sources (Sources 2 and 4), soil samples are used to characterize

these sources. For Source 2, soil background levels were available (see pages 54-58 of the HRS documentation record as proposed). For Source 4, background soil samples were available for some of the source samples; for the Source 4 soil samples where no background levels were available, the HRS documentation record did not associate naturally occurring substances such as cadmium and lead with the source. The hazardous substances associated with Source 4 where there are no background levels, are man-made substances (non-ubiquitous). These substances are associated with the paint manufacturing facility activities that occurred at the site (see pages 68-80 of the HRS documentation record as proposed).

Presented below are Sherwin-Williams's specific comments by source and EPA responses to these comments.

Source 1

Sherwin-Williams stated that no background samples were provided for the free-phase product samples and one of the soil samples, PS-01, used to associate hazardous substances with the source. It added, "[g]iven the product samples association with the soil, soil background samples are required to demonstrate that the hazardous substances are not due to the soil itself."

In response, the information associating all the organic substances with Source 1 is adequately supported in the HRS documentation record as proposed. For the samples used to associate metals with Source 1, only soil sample PS-01 was not presented with a specific background sample for comparison. Even if this sample were removed from consideration, cadmium, mercury, nickel, selenium, and vanadium would no longer be associated with Source 1, but the site score would not change. Source 1 is the free-phase product underlying the former Lucas plant in areas near Building 50, Building 67, and Tank Farm A. The primary samples used to associate the hazardous substances with this source are the free-phase product samples presented on pages 31-32 of the HRS documentation record as proposed. These samples came from wells in which the free-phase product collected or from seeps where the free-phase product flowed to the surface. They are not soil samples. Because they are waste samples, background samples are not needed to show that the contaminants in these samples can be associated with the free-phase product (waste) source.

EPA also noted the presence of "severe contamination in soil" in soil samples collected in the area of the free-phase product when associating hazardous substances with Source 1. While Sherwin-Williams may be confused for this reason in thinking the source included contaminated soils, this is not the case. As described on pages 22-23 and 93-94 of the HRS documentation record as proposed, this free-phase product source was often observed to be "seep areas" on the ground surface at the site, and often free-phase product discharged to Hilliards Creek. The contaminated soil is not scored as part of the source. Rather, the contaminated soil in the vicinity of the seeps shows that hazardous substances are migrating from the free-phase product onto the soils, and were thus used to document hazardous substances present in the source itself.

For all but one of the soil samples presented on pages 35-48 of the HRS documentation record as proposed, soil background samples are presented and EPA only associated with the source those substances found to be elevated in the soil samples above background. For the single sample, PS-01, without a listed background sample for comparison (see pages 36-37 of the HRS documentation record as proposed), EPA notes that this was a surface sample. While there was no other surface sample taken at the time (February 1996), sample PS-01 could be compared to other samples collected at the soil surface from other dates presented in the HRS documentation record as proposed. For example, sample 012-B001, collected in October 1991, at from 0 to 2 feet depth, had non-detect levels of the organic substances associated with sample PS-01 (see pages 40-41 of the HRS documentation record as proposed).

Further, even if sample PS-01 were removed from the evaluation of Source 1, the site score would not change. The removal of sample PS-01 from Source 1 evaluation would result in cadmium, mercury, nickel, selenium, and vanadium no longer being associated with Source 1. However, except for selenium, the hazardous substances identified in sample PS-01 are also found in other site sources and releases, and selenium is not used to evaluate the waste characteristics component of the site score (see pages 36- 37, 153-154, 156-159, 161, 163-167, 169, 224-231, 233-236, and 238 of the HRS documentation record as proposed).

Therefore, EPA considers it reasonable to associate acetone; 2-butanone; 1,2-dichloroethene; ethylbenzene; 1,1,2,2-tetrachloroethane; tetrachloroethene; toluene; 1,1,2-trichloroethane; trichloroethene; xylene (total); benzo(a)anthracene; benzo(a)pyrene; benzo(b)fluoranthene; benzo(k)fluoranthene; chrysene; 2,4-dimethylphenol; fluoranthene; 2-methylnaphthalene; naphthalene; phenanthrene; pyrene; aluminum; arsenic; barium; chromium; copper; iron; lead; magnesium; selenium; and zinc in the soil contaminated by free-phase product with the free-phase product source (Source 1). Furthermore, removal of sample PS-01 from the HRS scoring of the site would have no effect on the site score.

Source 3

Sherwin-Williams stated that three of the five sludge/leachate samples collected from Source 3 as liquid samples in units of milligrams per liter (mg/L) require an aqueous background sample for comparison, and sludge samples reported as solids require a background soil sample. It also stated that the five soil source samples listed on page 65 of the HRS documentation record require background soil samples.

Sherwin-Williams contended that five soil source samples were collected at a depth of 10 to 12 feet below ground surface (ft bgs). It explained that page 62 of the HRS documentation record states that the approximate depths of the surface impoundments are 5 to 15 feet. Sherwin-Williams contended that three of the five soil source samples could not have been collected from the interior of the surface impoundments, but were collected from native soils beneath the surface impoundments. Sherwin-Williams also commented that the lead level in the soil samples was nine times lower than in the background sediment samples.

In response, EPA presented adequate sample data to associate hazardous substances with Source 3. The sludge/leachate samples used to identify substances associated with Source 3 were waste samples and, as such, need not be compared with background. Source 3, the lagoons, is characterized as a backfilled surface impoundment, and these samples were from the materials in the lagoons. (See section 3.14.1.2, *Association of Substances with Sources*, of this support document for further discussion of Source 3 characterization.) According to pages 64 and 65 of the HRS documentation record as proposed, waste water sludge, leachate, paint sludge, and leachate/paint sludge samples were used to associate lead and arsenic with Source 3. As stated on page 64 of the HRS documentation record as proposed, these samples were collected in 1977 and 1978 to characterize the wastes in the lagoons or that were placed in the lagoons.

EPA also used soil samples taken during the RI in 1997 to associate hazardous substances with Source 3, as discussed on page 65 of the HRS documentation record as proposed. These samples were collected in the soil directly below the lagoons and in the material used to fill the lagoons and contained, among other substances, the same substances as in the original lagoon samples. The presence of the hazardous substances in these samples supported the identification of these substances associated with the lagoons.

EPA agrees that these subsurface soil samples were collected after the lagoons were remediated and from depths that appear to be below the lagoons. As noted by Sherwin-Williams, they were collected at depths

of 10 to 12 feet. These soil samples were collected below the base of the former features of the surface impoundments and below the fill material to evaluate whether natural soils were contaminated by the operations of the lagoons (see pages 64-65 of the HRS documentation record as proposed). Hence, the depths of the sample locations indicate that the hazardous substances were either from the fill material or were released to the soils from the waste sludge and other materials discharged to the lagoons during paint manufacturing operations. In either case they are substances Sherwin-Williams deposited in the lagoon source and can be associated with the lagoons.

The substances in these samples include non-naturally occurring organic substances and naturally occurring inorganic substances (metals). For the inorganic substances associated with the samples collected below the depth of the surface impoundment, it is possible that certain quantities of the contaminants present are naturally occurring in soils. Without a background level collected at that depth, how much is naturally present cannot be determined. Thus, EPA agrees that inorganic substances naturally occurring in soils in the area should not be associated with Source 3 based on these samples alone because no background levels for these substances were presented to show that the concentrations in the source samples are above background levels. EPA notes, however, that all of these inorganic substances are also associated with the other three sources used in the scoring of this site, so removing them from association with Source 3 has no effect on the site score. However, the organic substances found in these samples and present in the soil are not ubiquitous. Therefore, their presence is more likely than not due to migration from the lagoons, and thus it is appropriate to continue associating them with this source. EPA notes, however, only two of these organic substances, carbon disulfide and benzoic acid, are also not associated with other sources; these two substances were not relied upon in the scoring of the site (i.e., these substances were not used in assigning any HRS factor values such as waste characteristics). Thus, even if the substances associated with these soil samples were dropped from scoring, the site would still qualify for the NPL (see pages 36-37, 64-65, 153-154, 156-159, 161, 163-167, 169, 224-231, 233-236, and 238 of the HRS documentation record as proposed).

Regarding the comment that lead concentration in the soil samples associated with this source was nine times lower than background levels, these samples were not used to associate lead with the source, and this comment has no effect on the site score. The association of lead in Source 3 was documented by 1977 and 1978 analyses of waste sludges and leachate that were placed in the source.

Source 4

Sherwin-Williams claimed that the association of substances with Source 4 was based on 18 soil samples, but that background soil samples were presented for only 9 of the samples. It stated that EPA acknowledged this and said it would associate with Source 4 only those non-naturally occurring substances and substances known to be associated with facility operations. Sherwin-Williams indicated that this was contrary to Section 4.1 of the *HRS Guidance Manual*, which states, "Comparison to backgrounds is not necessary to establish the presence of hazardous substances for sources confirmed by manifests." Sherwin-Williams contended that no manifests were provided for Source 4; therefore, comparison to a background is necessary for Source 4. It added that:

> Given the presence of alternative sources of non-naturally occurring hazardous substances at the site, both from CERCLA ineligible sources and sources associated with adjacent CERCLIS sites, the nine soil samples cited without comparison to background soil concentrations cannot be used to evaluate the site.

In response, the association of hazardous substances with Source 4 is adequately supported. Source 4 is the contaminated soil associated with Tank Farm B. As discussed previously, to associate a substance with a contaminated soil source, it must be documented to be soil contaminated through hazardous

substance migration. (See HRS Sections 1.1, *Definitions*, and 2.2.2, *Identify hazardous substances associated with a source,* and section 3.12, *Analytical Data Quality Issues*, of this support document.)

This source is characterized solely with the analytical results associated with soil samples collected from this area. Samples include soil borings associated with monitoring wells installed from August 1991 through January 1992, soil samples collected from 1990 to 1997, and soil borings installed in July 1998 through January 2000.

EPA has no reason to conclude, nor did Sherwin-Williams demonstrate, that the substances associated with this source are migrating to this source from off-site sources. The nearest off-site facility that may have used, stored, or disposed of hazardous substances is a former gas station located east of and downgradient of at least part of this soil source (see Figure 3-2 of Reference 31 and pages 71-80 of the HRS documentation record as proposed). Therefore it is unlikely that contamination from the gas station would migrate upgradient to Source 4. In addition, the contaminated soil sources (Sources 2 and 4) at the Sherwin-Williams/Hilliards Creek site are in areas that were associated with the paint manufacturing activities, including storage, disposal, and spills at the facility, and the hazardous substances associated with this source are consistent with paint manufacturing processes. The areas encompassing Source 2 contaminated soil are located on the northwest side of Building 55, on the southeast corner of Building 55, and the area of the pump house located west of Building 67. These areas are near buildings used for facility operations and or storage of material containing hazardous substances; or in the case of the pump house, transfer of wastewater from the Lucas operations to the lagoons (see pages 51-52 of the HRS documentation record as proposed). The areas encompassing Source 4 contaminated soil are located in the area of Tank Farm B where raw materials were stored in aboveground and underground storage tanks (ASTs and USTs) (see pages 67-68 of the HRS documentation record as proposed). Thus, the contaminated soil locations evaluated in the HRS documentation record as proposed are associated with contamination resulting from facility activity.

Moreover, given that Sherwin-Williams conducted the sampling to characterize the soil contamination at the site, Sherwin-Williams must identify with specificity any complaints it may have regarding any claimed limitations in its data (i.e., which and how nearby sources or adjacent CERCLIS sites contributed to soil contamination at the Sherwin-Williams/Hilliards Creek site).

The information presented in the HRS documentation record is also sufficient to show that the substances associated with Source 4 are above background levels and not ubiquitous. As identified on pages 71-80 of the HRS documentation record as proposed, both naturally occurring metals and non-ubiquitous organic substances were associated with the source. The nine source samples for which background samples were presented were used to identify both naturally occurring metals and non-ubiquitous organic substances.

EPA used data from the nine samples for which no background samples were presented (see pages 76-80 of the HRS documentation record as proposed) only in associating non-ubiquitous organic substances with the source.

Page 75 of the HRS documentation record as proposed also states:

> No soil samples were collected in 1996 and 1999 that could be used as background for the 1996 and 1999 soil source samples listed in the tables below [on pages 76-80]. No background concentration is provided. Therefore, only concentrations of hazardous substances that are not naturally occurring and associated with operations at the Lucas plant are listed in the tables below and used to characterize Source 4.

EPA agrees that nine samples were collected in an event when no appropriate background samples were collected. Because of the lack of a background sample specific for this sample set, the nine soil samples on pages 76-80 of the HRS documentation record as proposed are used to characterize only the non-naturally occurring hazardous substances such as volatile organic compounds that are all man-made hazardous substances. The volatile organic compounds associated with these nine soil samples are associated with paint manufacturing and are not naturally occurring. Page 75 of the HRS documentation record as proposed clearly makes this distinction and outlines the use of the nine samples that do not have background samples for comparison.

Contrary to Sherwin-Williams's assertion, the evaluation of the soil samples used to characterize Source 4 is consistent with the *HRS Guidance Manual* (Publication 9345.1-07, EPA 540-R-92-026, November 1992). Section 4.1, *Characterization of Sources and Areas of Observed Contamination,* of the *HRS Guidance Manual* states:

> The basic methods for identifying hazardous substances associated with a source include:
>
> - Labels, manifests, or other historical records;
> - Site operations (e.g., if a plating facility uses trichloroethylene and disposes sludge into a surface impoundment, the scorer could assume trichloroethylene was present in the surface impoundment); and
> - Sampling.

Section 4.1 of the *HRS Guidance Manual* continues:

> However, consider these important points before associating hazardous substances with a source:
>
> - An observed release to the migration pathway can be shown by sampling or by direct observation (e.g., if sampling finds hazardous substances in a ground water plume associated with a landfill, the hazardous substances can be associated with the landfill).
> - Transformation products from a hazardous substance associated with a source can be scored only if sampling indicates they are present.
> - Comparison to background is not necessary to establish the presence of hazardous substances for sources confirmed by manifests (e.g., RCRA, DOT).
> - Visual observation of stained soils may be a clue to the presence of hazardous substances, but their presence must be verified through sampling or other means.

Thus, the *HRS Guidance Manual* is consistent with EPA's position that the association of hazardous substances with a source can be documented by a variety of methods for which the use of background samples is not required, notwithstanding the specific example in the *HRS Guidance Manual* which discusses the use of a manifest to associate hazardous substances with a source.

EPA notes that Sherwin-Williams may have confused the association of hazardous substances to a source with the attribution of a release of hazardous substances to the site. The attribution of the release of hazardous substances to the site is consistent with the HRS as discussed in section 3.15, *Likelihood of Release*, of this support document.

Summary

In summary, the hazardous substances associated with Sources 1 through 4 were adequately documented and are consistent with the HRS and EPA guidance. Further, these substances are associated with paint manufacturing, which occurred at the site over many decades. Sherwin-Williams's comments disputing the association of hazardous substances with site sources do not have an impact on the HRS score of this site.

EPA notes that if it dropped from consideration the single soil sample with no background sample associated with Source 1, the soil samples in Source 3 with no background samples, and those substances associated with soil samples from Source 4 with no background samples, while some substances would no longer be associated with the site, the overall HRS site score would remain the same. The substances excluded from evaluation would be: cadmium, mercury, nickel, selenium, and vanadium from Source 1; 2-butanone, carbon disulfide, ethylbenzene, xylene, benzoic acid, pentachlorophenol, barium, cadmium, chromium, copper, mercury, nickel, and zinc from Source 3; and benzo(a)anthracene; benzo(a)pyrene, benzo(k)fluoranthene, chrysene, di-n-butyl phthalate, phenanthrene, and 2-hexanone from Source 4.

The substances associated with sources were used to assign a waste characteristics value for the pathways and threats. When doing this, only the substances with the highest toxicity, persistence, mobility, and bioaccumulation appropriate for the pathway or threat are used in the overall scoring (see pages 157-158, 161, 163-167, 169, 228-229, 231, 233-236, and 238 of the HRS documentation record as proposed) for determination of the waste characteristics factor values for the surface water overland flow food chain and environmental threats, and the ground water to surface water food chain and environmental threats, respectively (see HRS Section 2.4.1.2, *Hazardous substance selection*). The highest scoring substances for each threat were:

- Overland flow food chain threat: benzo(a)pyrene, manganese, mercury
- Overland flow environmental threat: benzo(a)anthracene, benzo(a)pyrene, cadmium, mercury, pyrene
- Ground water to surface water food chain threat: naphthalene
- Ground water to surface water environmental threat: lead.

Even if the substances removed from the HRS documentation record included the single soil sample with no background sample associated with Source 1, the soil samples in Source 3 with no background samples, and those substances associated with soil samples from Source 4 with no background samples, benzo(a)anthracene, benzo(a)pyrene, cadmium, mercury, and pyrene would still be eligible and are the highest scoring substances for the surface water overland flow environmental threat component.[11] The HRS scoring was not dependent on the substances in the soil samples questioned by Sherwin-Williams.

3.14.2.4 Multiple Uses of a Sample

Sherwin-Williams commented that the method for selecting the source and soil background samples to characterize sources was flawed. As an example of this, Sherwin-Williams stated: "[s]pecifically, on page 40 of the HRS [documentation record], EPA cites sample 012-B002 as a source soil sample, and on page 41, uses the same sample as a background soil sample for another sample. This approach is unsupportable, as a sample cannot be used as a source and reference for the same source."

[11] The surface water overland flow component is the highest scoring component in the site score and of this component, the environmental threat has the most significant threat impact on the site score.

In response, EPA chose appropriate background samples to establish background levels for individual substances when background samples were presented and required for this purpose. Regarding the example given by Sherwin-Williams, EPA assumes Sherwin-Williams is referring to samples from location MW-12 in identifying hazardous substances associated with Source 1, free-phase product. Two samples are cited from this location: Sample 012-B001, collected at a depth of 0 to 2 feet, was used as a background sample for Source 1 (see pages 35-44 of the HRS documentation record as proposed). Sample 012-B002,[12] collected at a depth of 6 to 8 feet, was used both as a Source 1 source sample (see page 40 of the HRS documentation record as proposed) and as background sample for Source 1 (see page 41 of the HRS documentation record as proposed). While the Agency recognizes that this dual use of a sample as both a source sample and a background sample may appear confusing, it is technically valid. EPA often employs the approach of using the levels of an individual substance within a sample as a background level and then comparing those background levels with concentrations of those substances in other samples to show an elevated concentration of a substance. The background levels are normally based on the concentration of the substances in one or more samples collected where it is thought the concentration of the individual substance is representative of the background conditions for that substance. Because the objective is to show a relative increase in concentration, it is not necessary to have a separate sample value that is used only for background purposes. To illustrate, there may be three samples (A, B, and C) each with sample values for two substances (1 and 2). Sample A has a value of non-detect for substance 1 at a particular site, while sample B shows an increase of substance 1 over sample A, and shows a value of 0.01 for substance 2. This value of substance 2 in sample B (0.01) is thought to represent background concentrations of substance 2 because it is between the only known source of substance 2 and the location of sample C**.** Sample C shows a concentration of 1.00 of substance 2 over sample B. Thus, sample B serves as both a release sample (for substance 1) and a background sample (for substance 2).

However, even if the HRS evaluation eliminated the use of Sample 012-B002 as a source sample (see page 40 of the HRS documentation record as proposed) and continued using this sample to only represent background levels, this action would not impact the site evaluation. Ethylbenzene, total xylene, 2-methylnaphthalene, and naphthalene, which are associated with Sample 012-B002 as a source sample (see page 40 of the HRS documentation record as proposed), would remain as hazardous substances associated with Sources 1, 2, and 4 because they are detected in other source samples.

3.14.2.5 Sample Similarity

Sherwin-Williams stated that there are a number of problems with the comparability of the soil source and background samples selected to associate hazardous substances with sources. It cited an EPA fact sheet, as requiring that release and background samples be similar in physical characteristics, including texture, color, grain size, and soil stratum. Sherwin-Williams also raised the possibility that fill may have been brought to the site and emphasized that this would make "the detailed description of each soil sample necessary to verify that the source and background soil samples are comparable." It claimed the HRS documentation record does not provide a description of the type of soil samples sufficient to allow this determination to be made. It also said that for one sample set comparison, the samples had not all been analyzed for the same substances.

In response, the background soil samples and source soil samples used to characterize sources in the HRS documentation record were sufficiently similar to associate hazardous substances with contaminated soil sources at the site. In response to Sherwin-Williams's comments, below are summaries of the relevant information in the HRS documentation record for each source.

[12] It should be noted that on page 41 of the HRS documentation record as proposed, Sample 012-B002 is incorrectly identified as Sample 012-B001.

Source 1

As discussed on pages 32-35 of the HRS documentation record as proposed, all but one of these soil samples were compared with soil samples from the same studies that were collected from comparable depths using the same sample procedures and analyzed using the same methods. Further, as stated on age 34 of the HRS documentation record as proposed and supported by the Sherwin-Williams RI report, "All the soil samples are collected from the Westphalia and Nixonton Urban land complex soil types" (Reference 31, Figure 2-10).

Source 2

According to pages 51 and 52 of the HRS documentation record, Source 2 consists of contaminated soil in three areas: the Pump House, northwest of Building 55, and the southeast corner of Building 55. (See Figure 3-2 of Reference 31 of the HRS documentation record as proposed.) Hazardous substances associated with Source 2 were identified during numerous soil sampling investigations. The most recent investigation was the five-phase RI for the Lucas Plant performed under the direction of Sherwin-Williams. The analytical data from this RI are used to characterize Source 2. The Source 2 background soil samples were collected between 10/14/1997 and 1/15/1999 at depths ranging from surface to 17 ft bgs. The corresponding source soil samples were collected between 10/22/1991 and 4/16/1997 at depths ranging from 0.5 to 12 ft bgs (see pages 54-58 and Figure 3-2 of Reference 31 [RI report] of the HRS documentation record as proposed). Therefore, the background and source samples were from a similar range of depths. Moreover, the RI report did not indicate any variances from standard RI study procedure for sample collection and analysis, and thus it appears that Sherwin-Williams followed standard procedures when performing the RI study.

Source 3

The soil samples used in the characterization of Source 3, the lagoons, were collected below the depths of the lagoons and in the materials used to fill the lagoons following Sherwin-Williams's removal action, but have no background soil samples presented. Therefore, any naturally occurring substances, specifically metals for this source, have been dropped from the HRS evaluation.

Source 4

According to page 68 of the HRS documentation record as proposed, Source 4 consists of contaminated soil associated with Tank Farm B (see Figure 3-2 of Reference 31 [RI report] of the HRS documentation record as proposed). The soil samples' analytical data generated from the RI in the area of Tank Farm B documented the presence of numerous hazardous substances (see pages 68 and 70of the HRS documentation record as proposed) between 10/29/1991 and 7/8/1993 at depths ranging from surface to 8 ft bgs. The corresponding soil source samples were collected between 10/29/1991 and 7/8/1993 at depths ranging from surface to 8 ft bgs (see pages 71-76 and Figure 3-2 of Reference 31 [RI report] of the HRS documentation record as proposed).

Below, EPA addresses Sherwin-Williams's specific comments on source sample similarity.

Similar Soil Characteristics

Sherwin-Williams cited the EPA fact sheet, *Establishing Background Levels* (September 1995), as requiring that in all evaluations, release and background samples be similar in physical characteristics, including in texture, color, grain size, and soil stratum.

In response, the background soil samples used in associating hazardous substance with this source were collected from the same property at similar depths and in the immediate vicinity of the contaminated soil areas and, thus, it is reasonable to expect that they would have similar soil characteristics to those in the source samples.

EPA also notes that the EPA fact sheet cited by Sherwin-Williams simply provides guidance for establishing background levels for documenting observed releases, not for associating hazardous substances with sources. This purpose is clearly indicated in the fact sheet's introduction (page 1 of the EPA fact sheet, *Establishing Background Levels* [September 1995] at http://www.epa.gov/superfund/sites/npl/hrsres/fact/bglevels.pdf. If by citing this document Sherwin-Williams is suggesting that the data be of the same level of quality and similarity as for establishing observed releases, it is incorrect. The requirements for associating hazardous substances with sources are not the same as for establishing observed releases for the migration pathways used in scoring this site.

HRS Section 2.2.2, *Identify hazardous substances associated with a source*, directs the scorer to "consider those hazardous substances [that are] *documented* in a source . . . to be associated with that source . . . ." (Emphasis added.) As discussed previously in this support document, the data quality objective for associating substances with sources is qualitative evidence of a substance's presence. By contrast, to establish an observed release by chemical analysis under HRS Section 2.3 requires "*analytical evidence* of a hazardous substance in the media *significantly above the background level*. Further, some portion of the release must be attributable to the site." (Emphasis added.) Also as discussed in section 3.12, *Analytical Data Quality Issues*, of this support document, the data quality objective for establishing an observed release by chemical analysis is a demonstrated quantitative increase over background.

Furthermore, Sherwin-Williams directed the RI sampling events and submitted the data for the express purpose of characterizing the extent of contamination at the site to determine the extent of remediation necessary. Data of sufficient quality to establish that substances' concentrations are significant enough to warrant remediation are also of sufficient quality to achieve the qualitative objective of associating the substance with a source, if the substance is present above background levels.

Fill Material

Sherwin-Williams raised the possibility that fill material may have been brought to the site and emphasized that this would make "the detailed description of each soil sample necessary to verify that the source and background soil samples are comparable." Sherwin-Williams continued, "[t]hese descriptions are lacking in this HRS [documentation record], so the soil background samples selected to compare to source soil samples used to associate hazardous substances with the sources cannot be used at the site."

In response, Sherwin-Williams provided no specific information to support concerns regarding the presence of fill materials at the site. Because the entire Sherwin-Williams facility has been under redevelopment for many years, it is possible that fill materials have been introduced. The only area of the site where fill material is definitely known to be used is at Source 3 (the holding basin and four lagoons), where fill material was used to backfill the impoundments following the sludge removal in 1979. The elevated levels of hazardous substances in the contaminated soil source samples (Sources 2 and 4) are either for hazardous substances that are not naturally occurring or are sufficiently elevated over background levels that, even if the fill material was brought in and placed in depths up to 12 feet, the material would still be considered contaminated and, thus, eligible to be considered source material. In Sources 2 and 4, the hazardous substances associated with these contaminated soil sources were documented to be present above background levels and/or were non-ubiquitous substances that were

consistent with paint manufacturing activities. This rationale also applies to fill materials known to be currently present in the area of Source 3.

Similarity of Chemical Analysis

Sherwin-Williams asserted that some of the sample analyses could not be used in scoring because the samples were not analyzed for the same substances. On page 55 of the HRS documentation record, background soil sample B-75 was not analyzed for semivolatile organic compounds (SVOCs), but is being compared to source soil sample B-76, which was analyzed for SVOCs. Also, background soil sample B-78 was not analyzed for SVOCs or the metal cadmium but is being compared to soil source sample B-76, which was analyzed for SVOCs and cadmium.

In response, there was a repeated typographical error in the HRS documentation record as proposed; in fact the samples were all analyzed for the same substances. The typographical error was that NA (not analyzed) was presented in the HRS documentation record as proposed instead of ND (not detected) for several substances. Sample B-75 was compared to B-76 and B-78 was compared to B-76. These sample pairs were analyzed for the same parameters. Further details are provided below.

Regarding the comparison of cadmium values in samples B-76 and B-78 on page 56 of the HRS documentation record as proposed, to establish the presence of cadmium in Source 2, the error is in the documentation record rather than the comparison. A review of Table 4-5 of Reference 31 (RI report) demonstrates that the NA (i.e., not analyzed) designation for cadmium in sample B-78 is not correct as reported in the documentation record. Table 4-5 indicates that cadmium was included in the analysis for this sample but was ND (not detected). Cadmium was correctly reported at a concentration of 0.42 mg/kg in sample B-76 on page 56 of the HRS documentation record as proposed.

Regarding the comparison of SVOCs in samples B-76 and B-75 on page 55 of the HRS documentation record as proposed, a review of Table 3-1 of Reference 31 demonstrates that sample B-75 was analyzed for metals and SVOCs; a review of Table 4-5 of Reference 31 of the HRS documentation record as proposed demonstrates that no analytical result for SVOCs were presented for sample B-75. The HRS documentation record as proposed incorrectly lists the results for sample B-75 as not analyzed (NA) where it should indicate not detected (ND) for the SVOCs in this sample.

These typographical errors have no impact on the HRS evaluation of Source 2 or the site score. EPA has corrected these errors in the documentation record at promulgation.

3.14.3 Source Hazardous Waste Quantity

Sherwin-Williams stated that the HRS documentation record is deficient and incomplete because EPA had provided no calculation of hazardous waste quantity for any of the sources, relying instead on default values resulting from the establishment of an observed release from the sources.

In response, the HRS documentation record as proposed estimated a minimal, conservative hazardous waste quantity for each of the sources at the Sherwin-Williams/Hilliards Creek site based on the available information, namely, information collected during the RI in 1996 and 1997 (see Reference 31, *Remedial Investigation Report*, prepared by Weston for Sherwin-Williams). EPA did not identify any significant changes to these descriptions when it undertook the 2004 sampling investigation.

The evaluation of waste quantity is described in HRS Section 2.4.2, *Hazardous waste quantity*. The HRS allows the evaluation of source hazardous waste quantity based on a four-tier scale depending on the level

of information available. The four tiers, in the order of descending quality of data, are: hazardous waste constituent quantity, hazardous waste stream quantity, volume, and area.

For each of the four sources at the Sherwin-Williams/Hilliards Creek site, the HRS documentation record as proposed identified numerous samples containing elevated concentrations of multiple contaminants resulting from site activities (see pages 26-48, 53-58, 64-65, and 70-80 of the HRS documentation record as proposed). At each source, however, sample concentrations were reported from multiple depths below ground surface, and for three of the sources the boundaries of the sources were not determined, making it impossible to support a complete estimate of hazardous waste quantity using any of the HRS tiers. Therefore, EPA was only able to demonstrate that there were hazardous substances present in each source. As a result, each source was characterized as having a hazardous waste quantity of at least "greater than zero" (>0) but the exact amount unknown based on the unquantifiable but known presence of hazardous substances in each source (see pages 49-50, 59-60, 66-67, and 81-82 of the HRS documentation record as proposed).

Contrary to Sherwin-Williams's comment, the HRS does not provide default values for the hazardous waste quantity rating factor. Rather, it provides multiple tiers for evaluating waste quantity for each source based on the level of data available as described above. It then provides instructions for combining the values assigned to each source according to HRS Table 2-6, *Hazardous Waste Quantity Factor Values* (see HRS Section 2.4.2.2, *Calculation of hazardous waste quantity value*). The HRS next provides instructions for adjusting the total to take into account additional considerations such as response actions that may have occurred at the site and the presence of Level I or Level II targets[13]. Specifically, for situations such as those present at this site, the HRS states, "[i]f any target for that migration pathway is subject to Level I or Level II concentrations . . . assign either the value from Table 2-6 or a value of 100, whichever is greater, as the hazardous waste quantity factor value for that pathway."

As discussed on pages 155 and 230 of the HRS documentation record as proposed, consistent with the HRS instructions described above, the hazardous waste quantity factor for the Sherwin-Williams/Hilliards Creek site was assigned a value of 100 based on the presence of Level I and Level II targets for both the surface water pathway human food chain and surface water pathway environmental threats.

3.14.4 Source Containment

Sherwin-Williams asserted that the HRS documentation record is deficient and incomplete in its assignment of source containment values. It claimed that EPA did not address "existing containment for any of the sources," relying instead on default values resulting from the determination of an observed release from the source.

In response, EPA did not rely on default values based on an observed release from the sources to assign containment values for the four sources but rather, relied on source-specific characteristics. For the HRS evaluation of this site, containment information is provided only to demonstrate that the source areas are eligible for consideration as part of the site.[1] Any containment value greater than zero, indicating incomplete containment, would satisfy this requirement. HRS Section 2.2.3, *Identify hazardous substances available to a pathway*, directs the scorer to consider all hazardous substances associated with a source with a containment factor value of greater than zero to be available to migrate from the source to

[13] The HRS evaluates targets as Level I, Level II, or potential, corresponding to targets being at a location where sample contaminant concentrations exceed health or environmental benchmarks (Level I), at a location exhibiting observed contamination from the site but below benchmarks (Level II), and present within the TDL for the pathway but not yet at a location of documented contamination from the site. See HRS Section 2.5, *Targets,* for a detailed discussion of these procedures.

the pathway. As explained below for Source 1 and Source 3, evidence of hazardous substance migration specifically from the source was used in support of the containment evaluation, not as evidence of an observed release from the site.

Containment factor values were assigned to each source at the Sherwin-Williams/Hilliards Creek site consistent with the requirements of the HRS, and were not based on default values. As directed in HRS Sections 4.1.2.1.2.1.1 and 3.1.2.1, both titled *Containment,* for the surface water overland flow component and ground water to surface water component, respectively, conditions at each source were compared to containment criteria in HRS Table 3-2 for the ground water to surface water component and Table 4-2 for the surface water overland flow component of the surface water migration pathway.[14]

Three of the four sources at the Sherwin-Williams/Hilliards Creek site (Source 1, free-phase product, and Sources 2 and 4, contaminated soils) are not waste management units and have no containment structures or features such as those described in HRS Tables 3-2 and 4-2, used to contain and/or prevent contaminant migration from the sources and to assign HRS containment factor values for the ground water and surface water migration pathways, respectively. Therefore, these sources were assigned values of 10 because no liners, covers, or other containment features were associated with the source as required in Table 3-2 nor any runoff control systems were associated with the source as required in HRS Table 4-2.

Releases of Source 1, free-phase product, to Hilliards Creek are discussed at length in the source description section on pages 21-25 of the HRS documentation record as proposed. The source was assigned a containment value of 10 as discussed on page 25 of the HRS documentation record as proposed for both the surface water overland flow and ground water to surface water components of the surface water pathway. These releases occurred both directly through leachate seeps from the bank of Hilliards Creek and from seeps in parking areas flowing overland to the storm sewer system, and discharged from there to Hilliards Creek. In addition, Source 1 was not associated with any containment features and remains without any containment feature. As this area has not been permanently and completely remediated, and seeps are ongoing, Source 1 clearly has no containment features and continues to warrant a maximum HRS containment value of 10.

Sources 2 and 4 at the Sherwin-Williams/Hilliards Creek site consist of contaminated soils without any containment features that would obstruct migration of contaminants to ground water or surface waters at the site. Each was assigned a containment value of 10 for both components of the surface water pathway (see pages 52 and 69 of the HRS documentation record as proposed, respectively).

In Sherwin-Williams's lengthy account of investigations and remedial activities undertaken at the site to date, only one of the described activities might have altered "existing containment" conditions at one component of one of these sources: from 2002 to 2004, Sherwin-Williams excavated and removed the former pump house and 28 tons of contaminated soils. (Soils in the vicinity of the pump house were identified as one of three areas of soil contamination considered part of Source 2 in the HRS documentation record as proposed.) No documentation was provided to indicate that this removal was complete such that no contamination remained in the area of the pump house or otherwise contained the contamination. In any case, Sherwin-Williams makes no claim that any response actions were taken at the other areas of soil contamination making up Sources 2 and 4 in the HRS documentation record as proposed. Thus, the HRS containment factors for both components of the surface water pathway continue to warrant the maximum values of 10 for these sources.

[12]Containment is also evaluated as part of an evaluation of the potential of a substance to release to a media of concern if no observed release has been documented. At this site, observed releases have been documented so evaluation of potential to release was not required.

At Source 3, the HRS documentation record as proposed describes the lack of containment features and documents the release of contaminants from this source to both ground water and surface water. The source was assigned a containment factor value of 10 for both components of the surface water pathway (see page 69 of the HRS documentation record as proposed). Despite Sherwin-Williams's claim that this source has been removed in a response action that met all Agency criteria for a qualifying removal and, thus, should not have been scored, sampling subsequent to the removal action demonstrated the continued presence of contaminants in soils beneath the former lagoons and in the fill material itself. For this and other reasons, it was not a qualifying removal. (See Reference 31, *Remedial Investigations Report, The Paint Works Corporate Center, Gibbsboro, Camden County, New Jersey*, February 2001, of the HRS documentation record as proposed.) For a detailed discussion of EPA's rationale for including Source 3 in the HRS evaluation of the Sherwin-Williams/Hilliards Creek site, see section 3.13, *Source 3 Removal,* of this support document.

3.15 Likelihood of Release

EPA evaluated both the surface water overland flow/flood migration component and the ground water to surface water component of the surface water migration pathway. Comments on the likelihood of release to each component are discussed below in sections 3.15.1 and 3.15.2.

3.15.1 Likelihood of Release to Surface Water Overland Flow/Flood Migration Component

Sherwin-Williams disputed the identification of observed releases to surface water via overland flow. Its comments concerning the identification of an observed release by direct observation are discussed in section 3.1.5.1.1, *Observed Release by Direct Observation;* its comments on identification of an observed release by chemical analysis are discussed in sections 3.1.5.1.2, *Observed Release by Chemical Analysis,* and *3.15.1.3., Attribution of Release to Site*, of this support document.

3.15.1.1 Observed Release by Direct Observation

Sherwin-Williams challenged the identification of an observed release by direct observation to surface water by indicating that there were no data validation reports for the data used to establish the observed release. Sherwin-Williams indicated that only the 1998 and 2004 sediment and surface water analytical data for the surface water observed release have data validation reports.

In response, as discussed in HRS Section 2.3, *Likelihood of release,* an observed release by direct observation is established by direct observation of the release of a hazardous substance into the media being evaluated.

On pages 93-94 of the HRS documentation record as proposed, EPA discusses the direct observation of free-phase product (Source 1) entering Hilliards Creek, thereby documenting an observed release by direct observation. The analytical data identifying hazardous substances in the free-phase product (Source 1) were collected by Sherwin-Williams and NJDEP (see pages 93-94 of the HRS documentation record as proposed). It is sufficient that the analytical results documented that hazardous substances are present in the free-phase product and that the free-phase product was seen entering Hilliards Creek.

For all media, only the presence of the hazardous substance is required to establish an observed release by direct observation, not any quantitative increase between background and release levels in the medium being evaluated (see section 3.12, *Analytical Data Quality Issues*, of this support document). For documentation of an observed release by direct observation, EPA provides evidence, usually analytical, that a hazardous substance is entering the pathway medium (ground water, air). As there is no "difference

in quantitation" requirement, the concentration of the substance need not be quantitatively accurate to show a difference in concentrations between background and release samples. It is sufficient if an analytical result documents the substance is present at or above the contaminant's detection limit and if the analytical results have been reviewed under a quality control process, and quality control samples do not raise questions regarding the substance identification. Thus, the data quality objective is to ensure the presence of the substance in a source in contact with the transport medium or that the substance itself is in contact with the transport media (e.g., in a source that was flooded or the substance found in a discharge to surface water). At this site, the analytical data associating hazardous substances with the free-phase product (Source 1) were found to be of sufficient quality for this purpose. See section 3.12, *Analytical Data Quality Issues,* of this support document for discussions on the quality of the analytical data characterizing the free-phase product used to establish observed releases by direct observation.

3.15.1.2 Observed Release by Chemical Analysis

Sherwin-Williams submitted comments questioning the selection of the locations for the samples used to establish the background levels, the similarity of the background and release samples, and the attribution of the releases in Hilliards Creek to the site.

In response, as is discussed below, EPA considers the information and rationale contained in the HRS documentation record as proposed sufficient to identify observed releases to surface water by chemical analysis.

The HRS identifies the requirements for establishing an observed release by chemical analysis in HRS Section 2.3, *Likelihood of release.* It states for all media, that:

> [t]he minimum standard to establish an observed release by chemical analysis is analytical evidence of a hazardous substance in the media significantly above the background level. Further, some portion of the release must be attributable to the site." [emphasis added]

Table 2-3 of that section of the HRS contains the criteria for establishing a significant increase in the release substances.

As explained on pages 95-152 of the HRS documentation record as proposed, observed releases by chemical analysis to Hilliards Creek and the adjacent wetlands were established using both surface water and sediment samples. The locations of the observed releases extend from about 230 feet upstream of Gibbsboro-Clementon Road and between Silver Lake and the road to immediately upstream of the confluence of Hilliards Creek and Kirkwood Lake. (See Reference 97 of the HRS documentation record as proposed.)

Sherwin-Williams's specific comments on the establishment of background levels for identification of an observed release by chemical analysis are discussed in detail in the following two subsections on background level and background and release sample similarity.

3.15.1.2.1 Background Level

Sherwin-Williams questioned the adequacy of the location of the samples used to establish the background levels for the hazardous substances in the observed releases to surface water. It also commented that EPA did not collect any background samples from the portion of Hilliards Creek upstream of Silver Lake, which is upstream of the site and extends nearly 1 mile upstream of the most upstream PPE to surface water.

In response, EPA agrees that often background samples can represent background conditions if they are taken from directly above the initial PPE for the site. At the Sherwin-Williams/Hilliards Creek site, however, because Silver Lake is immediately above the PPEs for Source 1 (the free-phase product source) and Source 4 (contaminated soil in Tank Farm B), such a sample (i.e., a lake sample) would not have been from an environment similar to release samples from Hilliards Creek, a flowing creek. Furthermore, samples taken from the creek upstream of Silver Lake might also not have represented water quality conditions in Hilliards Creek as these samples would not have been exposed to the hydraulic conditions in Silver Lake. (The water currents in a lake, in comparison to a running creek such as Hilliards Creek, are much less forceful and would allow particles with much smaller particle sizes and lower densities to sink and make up the lake bottom sediments.) Finally, neither the lake nor creek samples would have been representative of the conditions in the downstream wetlands. Therefore, samples from Silver Lake or upstream of it would not have been appropriate for establishing background levels for Hilliards Creek downstream of Silver Lake.

EPA identified observed releases to surface water based on sampling events in 2004 and 1998. Which samples are adequate to establish background levels for each sampling event is discussed below.

2004 Samples

Samples collected during a 2004 sampling event were used to identify observed releases based on surface water, creek sediment, and wetland sediment samples. As discussed on pages 96-102 of the HRS documentation record as proposed, EPA used background samples collected in December, 2004 (as were the release samples) (see pages 103-114 of the HRS documentation record as proposed.) As stated on page 96 of the HRS documentation record as proposed, the background samples were collected from locations outside of the area known to be contaminated by lead as indicated by previous investigations. The samples were collected from locations with similar surface water type (i.e., creek downstream from a lake), drainage area, wetland, and soil type as the release samples to which they were compared (see page 8 of Reference 85 of the HRS documentation record as proposed). Reference 84, Figure 2, of the HRS documentation record as proposed, shows the background sample locations.

Because of the large variation in the sample matrices and environments at the release sample locations in Hilliards Creek, EPA did not collect a background sample for every release sample with the same sample matrix. Instead it collected multiple samples from similar environments and similar matrices, and selected the highest contaminant concentrations as the background levels for comparison to the release sample contaminant concentrations. These background samples came from locations that are representative of the same range of sample matrices and environments as did the release samples. As identified in Table 6 of the HRS documentation record as proposed (pages 97-98), EPA selected five sample locations to represent sediment backgrounds and seven locations to represent surface water background conditions. Of the background sediment samples, two were from wetland areas (i.e., HC-BSD-1 and HC-BSD-2), two were from discharges from small lakes in the immediate vicinity of the site (i.e., HC-BSD-7 and HC-BSD-8), and one was from Cooper River, upstream of the convergence of Hilliards Creek and Cooper River (i.e., HC-BSD-3). Of the surface water background locations, two were from wetlands (i.e., HC-BSW-1 and HC-BSW-2), two were from discharges from lakes to tributaries in the area (i.e., HC-BSW-5 and HC-BSW-8), one was from Cooper River, upgradient of the confluence with Hilliards Creek (i.e., HC-BSW-3), and two were from a small lake (i.e., HC-BSW-6 and HC-BSW-7) (see Table 6 of the HRS documentation record as proposed). (EPA also collected samples HC-BSW-4 and HC-BSD-4 from Nicholson Branch about 1,100 feet upstream of its confluence with Hilliards Creek, however, as these samples did not represent background conditions at the most upstream portion of this site [i.e., a stream location immediately following a lake], they were not used in establishing background

levels. These samples are discussed in section 3.15.1.3, *Attribution of Release to Site,* of this support document.)

A separate background level for each hazardous substance was established for sediment and water samples. As identified on page 99 of the HRS documentation record as proposed, the highest concentrations of arsenic, lead, and SVOCs detected in any of the background samples were selected as the background levels for establishing the observed releases. Given that the concentrations of the contaminants in the release samples are significantly greater than the contaminant concentrations found in any of the possible background location regardless of the sample matrix, the concentrations are also significantly greater than in similar sample matrices. Thus, EPA considers these background contaminant levels based on these background samples to be sufficient for use in establishing observed releases to surface water.

1998 Samples

As discussed starting on page 115 of the HRS documentation record as proposed, EPA collected more than 700 samples associated with Hilliards Creek to determine the extent of lead contamination in the Creek. EPA identified releases of lead based only on sediment samples taken from the center of Hilliards Creek. However, as discussed on pages 115-116 of the HRS documentation record as proposed, no specific sample location was identified as a background sample location. To represent background conditions for this sampling event, EPA selected two samples[15] from a location on Lower Haney Run, on the west side of Gibbsboro-Clementon Road (see Figure 1 of this support document and page 115 of the HRS documentation record as proposed). The location SD-60 was selected to represent lead background conditions because its location was not impacted by activities on the Lucas plant (it is upgradient of the source), and the samples were comparable to the release samples in time frame collected, analytical methods, environmental conditions (creek), drainage from similar areas, sample depth, and drainage basin (see page 115 of the HRS documentation record as proposed). The samples taken at SD-60 were collected from 0 to 2 inches in depth and 1 to 1.5 feet in depth, and the lead levels in the samples were 22.6 and 111 mg/kg, respectively. These concentrations were compared to concentrations in samples taken at similar depths in Hilliards Creek (see Table 15 of the HRS documentation record as proposed).

EPA considers the background sample locations and the corresponding background levels for release substances to be appropriate. EPA considers that the concentrations found in the samples taken at SD-60 are comparable to the concentrations of lead in the creek sediment background samples for the 2004 sampling event, which ranged from 2 to 183 mg/kg. EPA, therefore, used the concentrations in SD-60 as background levels to identify observed releases of lead for the 1998 samples.

3.15.1.2.2 Background and Release Samples Similarity

Sherwin-Williams asserted that for the observed release to surface water, EPA did not select similar background and release samples for comparison or provide adequate sample descriptions to document that the background and release samples used to establish the observed release were comparable.

Sherwin-Williams stated that, regarding the 2004 sampling event, the background samples were selected based on surface water body types. As an example, it added that the observed release samples on Hilliards Creek were compared to the highest background concentration or detection limit in the two background creek samples. Sherwin-Williams stated that according to page 6 of the EPA fact sheet, *Establishing Background Levels* (September 1995), the comparability of background and release samples

[15] EPA acknowledges that page 115 of the HRS documentation record misstates that one sample was selected, but as shown on page 116, two samples were selected from a single location.

should be based on grain size data, but the grain size data were not discussed in the HRS documentation record. For the 1998 sampling event, Sherwin-Williams pointed out that EPA presented neither TOC nor grain size information. Sherwin-Williams concluded that the comparability of the background and observed release sediment samples cannot be confirmed; therefore, the release samples cannot be used to establish an observed release.

In response, the background and release samples used to establish observed releases to surface water are sufficiently similar to identify observed releases. The HRS does not establish detailed similarity requirements for samples used in establishing observed releases. HRS Section 4.1.2.1.1, *Observed release*, instructs the user to "[l]imit comparisons to similar types of samples and background concentrations – for example, compare surface water samples to surface water background concentrations."

As reflected in Sherwin-Williams's comment, one way to show that comparisons are of similar types of samples is to compare the characteristics of the sample matrices (e.g., their physical and chemical characteristics such as grain size, similar percent organic matter, soil texture and type, and percent moisture). The sample matrices reflect the type of environment represented by the sample. Establishing that the samples are similar in matrix ensures that the significant increase in the concentrations is due to a release and not variations in the sample environments.

While comparing grain size of samples to predict similarity of matrices is one way to indicate that background and release samples are comparable, it is not the only way. Similarity of samples can also be established directly by showing that the samples came from the same environmental conditions. Since the sample matrices reflect the sampling environment, it can be expected that where the sampling environments are similar, the corresponding matrices would also be similar. For example, in a moving creek, large particles with similar grain sizes can settle into the bottom sediments, whereas fine particles in the sediments with corresponding small grain sizes will be entrained into the water column. In wetlands, the water movement is usually quite slow, and finer particles will therefore settle in these areas.

As discussed below, for the 1998 samples at this site, EPA considered that the samples were similar because they were collected from locations with similar environmental conditions: from the same water body type, within the same time frame, from the same depths, in the same drainage basin, and from locations that had similar upstream land uses and other conditions. Further, samples were collected and analyzed using the same methods. While EPA did not have measurements of the matrix (e.g., grain size), it had the above information indicating the samples were similar.

Also as discussed below, for the 2004 sampling events, EPA had direct evidence of sample matrix similarity, including sediment type information as well as information indicating that the samples were from similar environmental conditions, further supporting its determination that the samples for the background and release samples were sufficiently similar. For the sediment samples, EPA collected information on Total Organic Carbon (TOC) as well as grain size of the sample matrices. Tables 7 and 11 (pages 100 and 109-113 of the HRS documentation record as proposed) list the TOC levels in these samples. TOC varied from 6,000 to 57,000 mg/kg in the background samples and from 4,000 to 51,000 mg/kg in the release samples. EPA also collected grain size information, provided on pages 98-102 of Reference 94 of the HRS documentation record as proposed. Grain size was expressed as a percentage by weight of gravel, sand, silt, and clay in the sediment samples (which are defined as a function of their grain size). Background sediment samples had an average composition of 4.72 percent gravel, 81.78 percent sand, 11.22 percent silt, and 2.22 percent clay, which is similar to the composition of the release sediment samples which had an average composition of 2.53 percent gravel, 69.06 percent sand, 25.39 percent silt, and 4.55 percent clay.

For these reasons, Sherwin-Williams is incorrect in its comment that grain size must be presented in the HRS documentation record to establish an observed release based on surface water and sediment samples at this site. Grain size is simply one predictor of the similarity in sample matrices; direct comparisons of the sampling environments can also establish the similarity of sample matrices. EPA also notes that Sherwin-Williams did not point to any specific information indicating the sample matrices were in fact different in the background and release samples.

The background and release samples used to establish observed releases to Hilliards Creek were from similar environmental settings, were collected under similar environmental conditions and using similar sampling and analysis procedures, and were collected during comparable time periods. According to the HRS documentation record as proposed, the 2004 background locations were selected based on the similarity of surface water, drainage area, wetland, and soil type (see page 96 of the HRS documentation record as proposed).

The following summary lists the similarity of the background and release samples for the 2004 observed release:

- The sediment background samples were collected on December 9, 2004, at a depth of 0 to 2 inches. The observed release sediment samples were collected between December 6 and December 9, 2004, at a depth of 0 to 2 inches. (See Table 1 of Reference 84[16] and pages 97- 114 of the HRS documentation record as proposed.) The background surface water samples were collected on December 9, 2004. The observed release surface water samples were collected between December 6, 2004, and December 8, 2004. All surface water samples were collected at the surface of the surface water body. (See Table 1 of Reference 84 and pages 97 to 114 of the HRS documentation record as proposed.)

- The same sampling plan for the 2004 investigation was followed for both the background and observed release samples. The samples collected were also analyzed by the same methodology, and the same Quality Assurance Project Plan was adhered to for both the background and release samples collection. (See pages 5-6 and 13-14 of Reference 84, Reference 85, and pages 95-96 of the HRS documentation record as proposed.)

The observed release sediment samples from the wetland along Hilliards Creek were comparable to background sediment samples collected from the wetland along Linden Lake. The observed release surface water samples collected along Hilliards Creek were comparable to background surface water samples collected in the wetland area of Linden Lake, in Cooper River upstream of the confluence of Cooper River and Hilliards Creek, in an unnamed tributary at the Clement Lake discharge to this unnamed tributary, in Oles Lake, and in an unnamed tributary of Oles Lake. (See Figure 2 of Reference 84 and pages 97-98 of the HRS documentation record as proposed.) Sample similarities include: samples were collected during same time frame under the same weather conditions (see pages 4-6 of Reference 84 of the HRS documentation record as proposed); sample descriptions range from "fine grained sand, silt, heavy organic matter"; to "dark brown to fine to medium sand, some organic matter"; to "light brown" sediment. (See Field Logbook included as Appendix B of Reference 84 of the HRS documentation record as proposed.) Additionally, the samples were found to contain a similar amount of carbon (see Table 7 and page 100 of the HRS documentation record as proposed.) Most importantly, the type of wetland and stream were found to be of similar type with similar characteristics. The *Final Sampling Plan* submitted as Reference 85 of the HRS documentation record as proposed states that during the site reconnaissance and investigations, the background locations were selected based on similarity of surface water, drainage area, and type of wetlands to Hilliards Creek (palustrine emergent, palustrine forested,

[16] Tetra Tech. Trip Report for the Hilliards Creek Site, Gibbsboro, Camden County, New Jersey. June 13, 2005.

palustrine scrub/shrub) (see page 8 of Reference 85, Reference 93, and pages 95-99 of the HRS documentation record as proposed).

The following summary identifies specific similarities between the sediment background and release samples for the 1998 observed release:

- Sample location SD-60 located in Lower Haney Run draining Bridgewood Lake, although not originally designated as a background location for this sampling event, is used to establish background concentrations for the 1998 observed release analytical data, because it represents a similar environment as found where Hilliards Creek drains from Silver Lake. Where Hilliards Creek drains from Silver Lake is the most upstream location on Hilliards Creek and the most upstream PPE of contamination from the site into the creek. Two samples, one collected at 0 to 2 inches and another collected at 1 to 1.5 feet, were collected from Sample location SD-60 (see pages 115-116 of the HRS documentation record as proposed).

- The release sediment samples were collected from 0 to 2 inches and from 1 to 1.5 feet in Hilliards Creek at 50-foot intervals (see pages 117-129 of the HRS documentation record as proposed).

- All samples were analyzed for total lead using EPA Method 6010B. The detection limits are summarized in Reference 110 (see page 115 of the HRS documentation record as proposed).

- The background and release samples are comparable because they were collected under similar environmental conditions. They were collected within the same time frame, were analyzed using the same methods, were located within the same type of environment (creek), received drainage from similar areas, were collected from the same depths, and were located within the same drainage basin (see page 115 of the HRS documentation record as proposed).

Based on the sample summary information discussed above, there is adequate information to document that the background and release samples are sufficiently similar for comparison.

Finally, the background locations in the HRS documentation were selected based on the similarity of surface water, drainage area, wetland, and soil type (see page 96 of the HRS documentation record as proposed). Background and release sample similarities include sample depth, sampling method and handling, timing, weather conditions, and surface water body type. The background locations and resulting comparability to the release sample are adequate and consistent with the HRS.

3.15.1.3 Attribution of Release to Site

Sherwin-Williams raised two concerns with the attribution of the release to surface water starting from the PPEs to just upstream of Kirkwood Lake. First, Sherwin-Williams stated that the release substances could not be associated with on-site sources. Second, it asserted that EPA had not collected sufficient background samples to ensure that contamination downstream of the old Sherwin-Williams facility was not due to other off-site sources.

In response, the attribution of the observed release to the site is adequately documented and is consistent with the HRS, as described below in this section. HRS Section 2.3, *Likelihood of release,* contains the minimum requirements for establishing an observed release by chemical analysis to any HRS pathway. It states:

> The minimum standard to establish an observed release by chemical analysis is analytical evidence of a hazardous substance in the media significantly above the background level. Further, *some portion* of the release must be attributable *to the site*. [emphasis added]

HRS Section 4.1.2.1.1 contains similar instructions regarding establishing an observed release by chemical analysis to surface water.

EPA documented attribution in two steps. First, EPA documented that the substances in the releases were associated with the site, and specifically the sources identified at the site. Second, EPA determined if other possible off-site sources could be causing the significant increase in the contaminant concentrations.

Sherwin-Williams's two specific comments on attribution are addressed below.

3.15.1.3.1 Attribution of Release Substances to the Site Sources

Sherwin-Williams stated that the attribution of any observed release to surface water to the site is not possible, due to the lack of association of any hazardous substances to the sources in the source description section of the HRS documentation record.

In response, the observed release substances have been associated with the site and specifically with the on-site sources identified in the HRS evaluation. As stated above, the HRS requires attribution of some portion of the release "to the site," not specifically to the sources at the site. However, as discussed below, the HRS documentation record as proposed (pages 137-152 and 222-223) provided detailed discussions on attributing the release of arsenic, lead, and SVOCs to surface water to the site as well as to the identified sources. In summary, the record says the significant increase in concentrations of lead, arsenic, and SVOCs to Hilliards Creek is clearly attributable in part to historic and ongoing releases from the activities at the Sherwin-Williams/Hilliards Creek site. The history of the use of lead, arsenic, and SVOCs at the paint works is well documented. The Lucas plant, located at the headwaters of Hilliards Creek, was used to manufacture paints that contained lead. Surface water runoff from the plant flowed to Hilliards Creek during the entire operational period of the Lucas plant. The wastewater lagoons used to treat and store lead-contaminated paint sludge also discharged to Hilliards Creek.

Although the operations that led to the historic releases most likely terminated by the 1980s, this does not mean the contamination documented as presently downstream from the Paint Works area in Hilliards Creek did not at least in part originate from these operations. Further, at least part of the lead, arsenic, and SVOCs in Hilliards Creek is entering Hilliards Creek via ground water seeps flowing overland to the creek or by direct discharge of contaminated ground water and free-phase product to the creek.

Besides the historic information linking lead and arsenic to the Paint Works operations, these substances are also associated with four sources evaluated at the site (see pages 35-38, 54-56, 65, 71, and 73-76 of the HRS documentation record as proposed). In addition, numerous studies by both EPA and Sherwin-Williams have shown continuous increased contamination of these substances in Hilliards Creek downstream of the Paint Works area and the PPEs for the four site sources (see pages 138-139 of the HRS documentation record as proposed).

Further, the attribution of at least part of the releases to the Hilliards Creek site can be documented solely from the observed release by direct observation documented at the site. Pages 93-94 of the HRS documentation record as proposed present the following discussion as part of the observed release by direct observation to surface water:

> The free-phase product (Source 1) in the area of Buildings 50 and 67 was initially identified in 1983 when a seep of an oily substance was observed in the parking lot between former Buildings 50 and 67 (also known as the Academy Paints Building). The seep (Buildings 50 and 67) is the surface expression of the free-phase product in ground

> water in the area of Buildings 50 and 67 (Source 1). The seep flowed overland to a storm water catch basin in the parking lot, through the storm sewer, and then discharged through rip rap into Hilliards Creek (Refs. 32, p.5; 65, pp. 1, 2, 3). The seep was observed on many occasions during construction of the new office complex that now occupies the Lucas plant (Ref. 65, p. 1).
>
> On February 7, 1985, New Jersey Department of Environmental Protection (NJDEP) personnel collected an aqueous sample of Building 50 and 67 seep (Source 1) while it was discharging into Hilliards Creek (Ref. 32, pp. 5, 6, 7). The exact location of the sample is not provided in reference documentation. Analytical results for the seep sample indicated the presence of . . . hazardous substances (Refs. 6, Figure 2-4; 10, pp. 1, 2, 25 to 39; 31, pp. 3-2, 3-3 and Figures 2-2 and 3-2; Ref. 32, pp. 5, 6, 7).
>
> On April 9, 2002, free-phase product (Source 1) from an on-site free-phase product recovery system was observed in the storm water drain north of Building 67. The storm drain discharges into Hilliards Creek. Product was pumped out of the storm water drain, and additional measures were taken to prevent further releases to the drain and Hilliards Creek (Refs. 48, p. 2-3,; 72, pp. 2, 4; 73, pp. 2, 4).

The HRS documentation record as proposed goes on to discuss at least three other occasions where the Building 50 and 67 seep (Source 1) was seen discharging into Hilliards Creek. It also lists hazardous substances associated with the seep on page 94 of the HRS documentation record, and a more complete list of hazardous substances in the Source 1 (free-phase product) samples is provided on pages 31-48 of the HRS documentation record.

Additionally, an observed release by direct observation to ground water at the site is also documented. Page 179 of the HRS documentation record as proposed provides the following discussion in the ground water to surface water component of the surface water migration pathway:

> Free-phase product has been identified at nine monitoring locations: MW-11, MW-13, MW-21, MW-26, MW-27, WP-1, WP-3, WP-12, and WP-14. The estimated thickness of the free-phase product is between 0.22 and 0.42 foot (Ref. 31, p. 4-18). The presence of free-phase product in the monitoring wells documents hazardous substances in direct contact with the ground water.

EPA notes that this evidence is sufficient to attribute at least some portion of the release to the site as required by the HRS.

Regarding Sherwin-Williams's claim that no substances could be associated with the identified sources, EPA disagrees. As detailed in section 3.14, *Source Issues*, of this support document, while Sherwin-Williams claimed the association of substance with sources was inadequate, EPA's record for the site and the responses presented in this document show that this is not the case.

3.15.1.3.2 Consideration of Possible Off-Site Sources

Sherwin-Williams commented that the location and number of background samples used to establish an observed release to surface water by chemical analysis are inadequate to rule out the possibility that the releases downstream of the Gibbsboro-Clementon Road could be attributed to off-site sources. It pointed out that EPA had not identified background samples for every tributary entering Hilliards Creek throughout the segment identified as impacted by the site. It cited an EPA fact sheet, *Establishing Background Levels* (September 1995), as requiring that this be done. According to Sherwin-Williams,

this fact sheet states, "[t]he presence of multiple tributaries upstream with multiple potential sources would require collecting multiple background samples in each tributary to differentiate the potential contribution of contamination from off-site sources." Sherwin-Williams commented that, typically, background samples would be collected from the background stream immediately upstream of its confluence with the release stream so that other potential sources of contamination can be accounted for. Sherwin-Williams provided the following examples of allegedly inadequate background sample locations:

- Sherwin-Williams stated that Sample HC-BWS-5 does not account for potential non-point contamination that enters Haney Run from the residential area where Haney Run flows 1.5 miles through to its confluence with Hilliards Creek.

- Sherwin-Williams stated that Samples HC-BSW-4 and HC-BSD-4 collected from Nicholson Branch were collected 1,100 feet upstream of its confluence with Hilliards Creek and 300 feet upstream of Nicholson Branch's crossing with an unnamed secondary highway. Sherwin-Williams contended that, because lead deposition in soils adjacent to roadways is well documented, the background samples should have been collected downstream of Nicholson Branch's crossing with the road so that potential lead contribution in runoff from the road can be accounted for.

- Sherwin-Williams stated that HC-BSW-1, HC-BSD-1, HC-BSW-2, and HC-BSD-2 collected from wetlands in Linden Lake, approximately 3,300 feet upstream of the confluence of Cooper River with Hilliards Creek, do not account for potential non-point source contamination that enters Cooper River from the residential and commercial/industrial areas located between the sampling locations and Hilliards Creek.

In response, sufficient information has been presented to demonstrate that at least part of the significant increase in the observed release substances is due to releases from the Sherwin-Williams facility. First, as documented in the previous section, EPA finds that more likely than not, given observed releases by direct observation and a long history of spills and discharges by Sherwin-Williams and its predecessors since the middle 1880s, that at least part of the significant increase found in Hilliards Creek, especially for lead but for all common paint ingredients, is attributable to releases to the site. It is reasonable to conclude that these direct observation releases are contributing to contamination throughout Hilliards Creek because the significant increases in contamination start at the point that these observations occur and continue downstream without interruption to the end of Hilliards Creek. There is also no reason to think that the contamination would have stopped moving with the water as it flowed through the creek.

Regarding the lack of background samples from every possible tributary or location of drainage immediately prior to its confluence with Hilliards Creek, while if this level of sampling had been performed, it would have shown if other sources were contributing to the contamination in the creek, it is not the only way that this can be shown. In this case such background samples are unnecessary, since all that is required is that "some portion" of the release be attributable to the site, and, as discussed above, this requirement has been met. Additionally, such sampling would be totally impractical given the large number of minor drainages and tributaries to Hilliards Creek.

However, EPA examined the possibility of other sources contributing to the contamination in Hilliards Creek. Instead of using the above approach of intensive sampling, EPA examined the spatial distribution of the concentrations of the released substances in the sediments and surface water samples in Hilliards Creek for any evidence suggesting alternative sources of downstream contamination. If other significant sources of contamination were entering the creek, one would expect there to be a significant increase in contaminant levels at the confluence of tributaries or drainages with the creek. EPA examined the spatial distribution of contaminants in both the 1998 and the 2004 sampling events as described below.

During the 1998 sampling event in Hilliards Creek, EPA collected samples closely enough spaced to show that concentrations did not unusually increase as sampling went downstream in Hilliards Creek. In that sampling event, EPA collected 676 sediment samples, 42 soil samples, 3 waste samples, and 8 aqueous samples from Hilliards Creek between Foster Avenue and Hilliards Road, and from tributaries to Hilliards Creek, to determine lead contamination within the creek's flood plain (see page 115 of the HRS documentation record as proposed). In the 2004 sampling event, 48 more samples were collected from Hilliards Creek.

The sampling events showed continuous contamination downstream from Gibbsboro-Clementon Road. In fact, in the 2004 sampling, the levels of metals stayed in the same range of concentration with distance from the road once the stream widened out after passing under the road (at sample SD04). Lead stayed mainly in the 1,000 to 5,000 microgram/kg range and arsenic in the 100 to 1,000 microgram/kg range. (See Table 11, pages 109-113 of the HRS documentation record as proposed.) The significant increases in organics terminated just after this road at sample SD04. In the 1998 sampling, lead, the only substance reported, was clearly higher in concentration at depth, but also showed continuous contamination throughout the sample area.

Furthermore, after reviewing Sherwin-Williams's comments, EPA reexamined the contaminant levels for the 2004 release surface water and sediment samples from Hilliards Creek at the confluence with Nicholson Branch (HC-SD-35 and HC-SD-38) and with the outlet stream draining Bridgewood Lake (HC-SD-05 and HC-SD-06) and found that lead contamination in Hilliards Creek did not increase immediate following its confluence with these tributaries and in fact decreased slightly. (See Reference 97, a map showing the 2004 sampling locations, of the HRS documentation record as proposed.) The lead concentration in HC-SD-35 (sediment sample from Hilliards Creek from a location immediately prior to the confluence of Hilliards Creek with Nicholson Branch) was found to be 4,090(J) mg/kg compared to 3,640(J) mg/kg, the concentration of lead found in HC-SD-38 (sediment sample from Hilliards Creek from a location immediately following the confluence of Hilliards Creek with Nicholson Branch). Similarly, the lead concentration in HC-SD-05 (sediment sample from Hilliards Creek from a location immediately prior to the confluence of Hilliards Creek with the unnamed tributary from Bridgewood Lake) was found to be 1,010(J) mg/kg compared to 477(J) mg/kg, the concentration of lead found in HC-SD-06 (sediment sample from Hilliards Creek from a location immediately following the confluence of Hilliards Creek with the unnamed tributary from Bridgewood Lake).

Regarding the possibility of one or more of the observed releases identified in the HRS package being due to contamination from sources on the Cooper River upstream of the confluence of Hilliards Creek with the Cooper River, EPA did not collect sediment samples from the Cooper River immediately prior to its confluence with Hilliards Creek. However, the HRS evaluation did not identify or include in the site scoring any releases attributable to Sherwin-Williams in the Cooper River before or after Hilliards Creek flows into Cooper River: All observed release locations are in Hilliards Creek (see Reference 97 of the HRS documentation record as proposed). Thus, the possibility of contamination in the Cooper River is not relevant to the HRS scoring of the Sherwin-Williams/Hilliards Creek site.

Therefore, EPA considers the information presented in the HRS documentation record as proposed sufficient to attribute the significant increase in contaminant levels at least in part to releases from the Sherwin-Williams facility as far downstream as the sample in Hilliards Creek nearest to the entrance to Kirkwood Lake.

3.15.2 Likelihood of Release to Ground Water to Surface Water Migration Component

Sherwin-Williams's comments on the likelihood of release to ground water to surface water migration component are discussed in Sections 3.15.2.1, *Observed Release by Direct Observation*, and 3.15.2.2, *Observed Release by Chemical Analysis*, below.

3.15.2.1 Observed Release by Direct Observation

Sherwin-Williams commented that, "EPA bases the direct observation (described on page 179 of the HRS documentation record as proposed) on the observation of 'free-phase product . . . at nine monitoring locations,' although EPA does not provide chemical analysis for the product observed in the HRS documentation record."

In response, the HRS documentation record has correctly identified an observed release by direct observation of hazardous substances to ground water based on free-phase product in direct contact with ground water at the Sherwin-Williams/Hilliards Creek site. As explained in the HRS, an observed release can be established in two ways, by chemical analysis or by direct observation (see HRS Section 2.3, *Likelihood of release*). EPA documented the observed release of hazardous substances from this site to ground water using both options (see pages 179-221 of the HRS documentation record as proposed). When documenting an observed release by direct observation to ground water, HRS Section 3.1.1, *Observed release*, instructs the user to base this determination on whether "a material that contains one or more hazardous substances has been deposited into or has been observed entering the aquifer."

The HRS documentation record as proposed states on page 179, "Free-phase product has been identified at nine monitoring locations: MW-11, MW-13, MW-21, MW-26, MW-27, WO-1, WP-3, WP-12, and WO-14. The estimated thickness of the free-phase product in these wells was between 0.22 and 0.42 foot (see Reference 31, p. 4-18). Since the monitoring wells contain both free-phase product and ground water, the presence of free-phase product in the monitoring wells documents hazardous substances in direct contact with ground water.

Although not listed on page 179, the HRS documentation record listed the analytical results from the samples of the free-phase product in the sampling wells in the Source 1 discussion of the HRS documentation record as proposed. The HRS documentation record lists the hazardous substances in the free-phase product based on these and other samples (Source 1 at this site) on pages 31-48 of the HRS documentation record where it identified hazardous substances associated with the free-phase product. Samples of the free-phase product were analyzed and were found to contain lead, benzene, ethylbenzene, tetrachloroethene, 1,2,4-trimethylbenzene, xylene, benzo(a)pyrene, chrysene, fluoranthene, 2-methylnaphthalene, naphthalene, and several other hazardous substances. Also, the hazardous substances identified in the free-phase product are listed throughout the HRS documentation record as proposed, including pages 26-27, 29, and 31-32. Therefore, EPA provided chemical analysis of samples associating hazardous substances with the free-phase product in the HRS documentation record as proposed. The discussion in the HRS documentation record concerning the observed release to ground water by direct observation has been revised to include this information.

3.15.2.2 Observed Release by Chemical Analysis

Sherwin-Williams questioned the sampling methodologies used to collect the samples that were used to establish an observed release to ground water, the similarity of the background and release samples, and the documentation of the quality of the data. As required by HRS Section 2.3, *Likelihood of release*, EPA showed a significant increase over background, attributed in part to the site. Sherwin-Williams's comments on the adequacy of sampling methodologies, similarity of background samples, and observed

release analytical data quality are discussed below in sections 3.15.2.2.1, 3.15.2.2.2, and 3.15.2.2.3, respectively.

3.15.2.2.1 Sampling Methodologies

Sherwin-Williams stated that the sampling devices (i.e., bailer, pump, diffusion bag) and methodology used (i.e., low-flow sampling vs. post-collection sample filtration) to collect the ground water samples used to establish an observed release by chemical analysis to groundwater were not discussed in the HRS documentation record, and that without these discussions it cannot be established that the ground water background and release samples are comparable.

In response, the sampling event referred to by Sherwin-Williams was performed by Sherwin-Williams as part of an RI called for in an ACO between Sherwin-Williams and the State of New Jersey. EPA has no reason to doubt the appropriateness of the sampling methodologies selected and used by Sherwin-Williams and approved of by the State of New Jersey to collect the ground water samples for the purpose of quantifying the ground water contamination at the Sherwin-Williams facility or its usability in establishing observed releases to ground water. Given that Sherwin-Williams conducted the sampling and analysis, Sherwin-Williams must identify with specificity any complaints it may have regarding any claimed limitations of its own data.

The purpose of the RI was to produce data of acceptable quality to determine the need for further investigation and remediation, if necessary. The ACO under which the RI was conducted called for a work plan to be developed for all activities. The work plan would have included specification of the sampling and analysis and quality assurance procedures to be used for each phase of the RI, and the work plan was to be submitted to the State for approval prior to the appropriate sampling event. Sherwin-Williams, on pages 1-3 of Attachment 1 to its July 17, 2006, comment (EPA-HQ-SFUND-0242-0014) stated that the ground water sampling was "performed under the oversight of the NJDEP "and conducted in accordance with the NJDEP-approved work plan. Thus, EPA has no reason to question the adequacy of the sampling devices and procedures used by Sherwin-Williams to collect the ground water samples used to establish the observed release to ground water.

Regardless, even if the score for the ground water to surface water component of the surface water pathway were dropped from consideration, the site score would remain unchanged based only on the overland flow/flood migration component of the surface water pathway. The surface water pathway score and, correspondingly in this case, the site score (because the surface water pathway is the only pathway scored), is based on the higher of the two component scores (see HRS Section 4.3, *Calculation of surface water migration pathway score*.) At proposal, both components were assigned the same score, and either component would result in the same site score of 50.00.

3.15.2.2.2 Similarity of Background and Release Samples

Sherwin-Williams contended that the selection of the background sample locations for the ground water to surface water component of the surface water migration pathway is inadequate to establish an observed release. Sherwin-Williams specifically stated that the "[d]ata used to document the comparability of background and release ground water samples from the perspective of ground water flow direction are the screened intervals of the monitoring wells from which the samples were collected." Sherwin-Williams added that the actual requirement needed to demonstrate that a given ground water sample is upgradient of another is the elevation of the ground water in the well, which is an expression of the potentiometric surface that documents head differences between wells. (Sherwin-Williams indirectly referred to the EPA Quick Reference Fact Sheet, *Establishing Background Levels* [September 1995].) Sherwin-Williams contended that the ground water elevations of wells used to document an observed release are not

discussed in the HRS documentation record and, without this information, it cannot be established that the background and release sample are comparable.

In response, Sherwin-Williams is incorrect that "[d]ata used to document the comparability of background and release ground water samples from the perspective of ground water flow direction are the screened intervals of the monitoring wells from which the samples were collected." The screened intervals of the monitoring wells from which the samples are collected and the ground water flow direction are two different factors that EPA used to determine if a well is appropriate for use as a background well. The background and release samples used to establish an observed release by chemical analysis to ground water were from wells screened at comparable intervals from the same relative part of the aquifer underneath the site, and the background wells were located upgradient of the release wells.

The comparison of wells with similar screened intervals ensured that the samples were from the same relative portion of the aquifer. This is done because based on a substance's density and solubility in water, it will tend to be present in certain parts of an aquifer (e.g., substance with densities less that water will tend to stay or "float" in the upper part of the aquifer). In this case, EPA used wells screened in the same part of the aquifer (the depth of a screened interval of a well corresponds to the depth in the aquifer from which the sample is collected.) Table 28 on page 182 of the HRS documentation record as proposed presents the well depth and the screened intervals for the 6 wells from which background samples were collected. (While this table presents 11 wells, the other 5 wells listed, SGW-200, SGW-204, SGW-210, SGW-212, and SGW-286[17], were not used to establish the background level.) All of the 6 wells were screened in the shallow aquifer; the screened intervals for the 6 wells are listed as depths ranging from 17.21 to 84.57 ft msl [feet mean sea level].

The screened intervals for the release wells were presented in Table 31 on pages 204-205 of the HRS documentation record as proposed. The well screen intervals for the observed release wells are listed as depths ranging from 9.83 to 85.09 ft msl. Thus, the background and release wells were screened over the same interval, and therefore also in the same relative part of the shallow aquifer.

Ground water flow direction is used in showing that contamination found in the release wells is not due to other possible sources. In this case, both the 6 background wells and the other 5 wells listed in the background well table were used to show that the contamination was not due to upgradient sources. (It should be noted that all wells were screened in the upper portion of the aquifer.)

Well locations are shown in Figures 3-2 and 4-7 of Reference 31 of the HRS documentation record as proposed. Pages 179-182 of the HRS documentation record as proposed and Figures 3-2 and 4-7 of Reference 31 (RI report) of the HRS documentation record as proposed demonstrate that the background wells were both upgradient and in areas of relatively higher or the same potentiometric surface measurements (north to northeast) of release samples. Page 178 of the HRS documentation record as proposed and page 4-2 of Reference 31 (RI report) of the HRS documentation record as proposed, state that ground water in the shallow aquifer flows from the northeast to the southwest towards Hilliards Creek. Figures 4-2 through 4-7 of Reference 31 of the HRS documentation record as proposed are ground water contour maps depicting ground water flow direction as towards Hilliards Creek based on water level elevations in monitoring wells in the shallow aquifer. Section 4, *Site Hydrogeology*, of Reference 31 discusses the hydrogeology of the site. Pages 4-2 and 4-3 of the HRS documentation record as proposed identify Silver Lake as the localized zone of ground water recharge, or the potentiometric "high," and Hilliard Creek, White Sand Branch, and Bridgewood Lake as the areas of groundwater discharge, or potentiometric "low." Generally, the groundwater flow at the site is from the areas of high

[17] SGW: Hydropunch™ ground water samples (shallow ground water) (Pages 181 to 182 and 186 to 187 of the HRS documentation record as proposed).

potentiometric surface measurements (e.g., Silver Lake, or north to northeast of sources) to those with lower potentiometric surface measurements (Hilliards Creek, White Sand Branch, and Bridgewood Lake; or south to southwest of sources). Therefore, ground water flow was from the north and northeast to the south and southwest. Comparison of the locations of the background and release wells on Figure 3-2 shows that the background wells are upgradient of the release wells. Since the contamination levels in these upgradient wells are significantly lower than in the release wells, this demonstrates that the contamination is not due to any offsite upgradient sources.

3.15.2.2.3 Observed Release Analytical Data Quality

Sherwin-Williams commented on the data quality of the analytical data used to evaluate the observed release to ground water. Sherwin-Williams concluded that the ground water analytical data cannot be used in the HRS documentation record to support EPA's NPL proposal.

In response, the HRS documentation record as proposed has documented an observed release to the ground water to surface water component of the surface water migration pathway at this site on pages 176-223. The adequacy of the documentation of the data quality used to establish the observed release is also sufficient for the purpose of identifying observed releases to ground water. Sherwin-Williams's comments on the analytical data quality are discussed in detail in section 3.12, *Analytical Data Quality Issues*, of this support document.

3.16 Waste Characteristics/Target Issues

Sherwin-Williams asserted that since observed releases to surface water and ground water are not documented, EPA cannot assign default values for pathway waste quantities based on the presence of any actually contaminated targets or based on an observed release. Sherwin-Williams claimed that, for the same reason, EPA cannot identify any actually contaminated targets because such identification also requires observed releases.

In response, Sherwin-Williams bases its conclusions regarding EPA's use of "default values" for hazardous waste quantities and the presence of contaminated targets on the Agency's alleged failure to document an observed release to ground water or surface water. Sherwin-Williams is mistaken about this alleged failure. As a result, these comments have no impact on the HRS site score or the listing decision. For a detailed discussion of the observed releases documented at the Sherwin-Williams/Hilliards Creek site, see section 3.15, *Likelihood of Release Issues*, of this support document. For a discussion of the alleged use of default values in the HRS evaluation of waste quantity, see section 3.14.3, *Source Hazardous Waste Quantity*, of this support document.

3.17 Errors in Descriptive Facts

Sherwin-Williams claimed there were errors in the descriptions of the site presented in the HRS documentation record. Brandywine also identified what it considered to be several factual errors in the HRS documentation record. The following numbered comments are errors alleged by Sherwin-Williams and/or Brandywine, and the following italicized paragraphs are EPA responses. Seven of these errors required modification of text description in the HRS documentation record. None of these errors affect the HRS site score.

1. Sherwin-Williams commented that the HRS documentation record states in the 4th paragraph on page 16 that, "[i]n 1983, Scarborough demolished most of the Sherwin-Williams facility." Sherwin-Williams contended that this statement is a "conflict of documentation." It then commented that page

17, 2nd paragraph states, "The portion of the corporate center north of Foster Avenue is occupied by numerous buildings including former Buildings 14, 33, 55, 57, 58, and 82."

In response, consistent with information in References 31 and 32 of the HRS documentation record as proposed, Scarborough demolished or renovated existing buildings and undertook various construction projects in 1983 and thereafter. The information on pages 16 and 17 of the HRS documentation record indicates that some of the former buildings on the corporate center are still there. Because the presence or absence of these buildings is not the basis for nor influences the assignment of the HRS score of the site, this comment has no impact on the site score.

2. Sherwin-Williams commented that the HRS documentation record states in the 3rd paragraph on page 17 that, "Bridgewood Lake and Silver Lake are located on the corporate center." Sherwin-Williams and Brandywine contended that Bridgewood Lake is actually south of the corporate center and outside of the limits of the former plant and the property owned by Brandywine. Sherwin-Williams added that the lake is bounded to the north/northwest by Cedar Grove cemetery, to the south by Squire Circle Sports Club, to the east by United States Avenue and to the west by Clementon Road. Brandywine also commented that Bridgewood Lake is "not located on property owned by Brandywine."

   In response, EPA agrees that the HRS documentation record incorrectly states that Bridgewood Lake is on the corporate center. EPA revised page 17 of the HRS documentation record to correctly state that Bridgewood Lake is located south of the corporate center along the south border of the Sherwin-Williams facility. Because the site score is based on the location of contamination, not the location of the lake relative to the present corporate center, this comment has no impact on the site score.

3. Sherwin-Williams commented that the HRS documentation record states in the 7th paragraph on page 19 that two fires occurred at the plant. Sherwin-Williams contended that fires occurred in 1905, 1915, 1930, and 1949.

   In response, EPA agrees that the HRS documentation record understates the number of fires that occurred at the facility. According to Reference 31 of the HRS documentation record as proposed, four fires occurred at the facility between 1905 and 1949. EPA revised the HRS documentation record on pages 19 to 20 to accurately state the number and dates of the fires that occurred at the facility. This comment has no impact on the site score because the number of fires at the facility was not used in assigning any HRS factor values.

4. Sherwin-Williams commented that the 2nd paragraph on page 20 of the HRS documentation record states: "In December 1977, a portion of the former plant property was sold to Brandywine Realty Trust." Both Sherwin-Williams and Brandywine contended that this statement is inaccurate. Sherwin-Williams and Brandywine contended that a portion of the former plant was sold to Brandywine Realty Trust in 1997, not 1977.

   In response, EPA agrees that the HRS documentation record incorrectly states on page 20 that a portion of the former plant was sold to Brandywine in 1977. EPA revised the HRS documentation record to accurately state that this transaction occurred in 1997. This comment has no impact on the site score because the ownership of the property is not used in assigning any HRS factor values or defining the extent of the site for listing purposes.

5. Sherwin-Williams commented that the HRS documentation record states in the 3rd and 4th paragraphs on page 20, referring to a NJDEP Spill Act Directive issued to Scarborough and Sherwin-Williams: ". . . requiring that a remedial investigation and feasibility study (RI/FS) be conducted at the former

Lucas plant and immediately adjacent lands. . . The subsequent RI was conducted at the Lucas plant from August 1991 through January 2000 . . ." Sherwin-Williams contended that it has conducted significant investigations at the Paint Works and Hilliard Creek under EPA since 2000. Sherwin-Williams submitted Attachment 1 to its comments listing a series of "past and ongoing site activities conducted by Sherwin-Williams."

In response, the information on page 20 of the HRS documentation record as proposed was not meant to be a complete history of activities at the site. This section of the HRS documentation record has been revised to clarify the RI effort has not been completed. Section 3.11, Withdraw Listing While Sherwin-Williams Completes Response Actions*, of this support document, discusses the effect of Sherwin-Williams's activities on the scoring of the site. This comment has no impact on the site score.*

6. Sherwin-Williams commented that the HRS documentation record states in the first paragraph on page 21: "This source includes free-phase product present in ground water underlying the former Lucas plant in areas of Building 50, Building 67, and Tank Farm A." Sherwin-Williams contended that free-phase product has not been confirmed to exist under these buildings.

   In response, the HRS documentation record as proposed is accurate in its account on page 21 that, "[t]his source includes free-phase product present in ground water underlying the former Lucas plant in areas of Building 50, Building 67, and Tank Farm A." [emphasis added] *This information is supported by information contained in Reference 31 of the HRS documentation record as proposed identifying location of free product. The information in Reference 31 and in the HRS documentation record did not state that the contaminated ground water is under the buildings, but, rather, is in the areas near the buildings or in the vicinity of the buildings. Because EPA did not assume contamination under any buildings in the assignment of any HRS factor values, this comment has no impact on the site score.*

7. Sherwin-Williams commented that, in the 4th paragraph on page 22, the HRS documentation record incorrectly identifies "Building 50 as the Gibbsboro Police Station Building (current occupants of the building) . . ." Sherwin-Williams contended that Building 50 is also used as a maintenance building by the current land owner, Brandywine Realty Trust.

   In response, regardless of the use of Building 50, it was not used in assigning any HRS factor values, and the information would have no effect on the site score or listing decision.

8. Sherwin-Williams commented that the HRS documentation record states in the second paragraph on page 24: "Since John Lucas and Company used Building 50 as a garage . . ." Sherwin-Williams contended that Building 50 has been used as a maintenance garage by all land owners up to the present.

   In response, EPA has not revised the HRS documentation record to reflect this information provided by Sherwin-Williams. Sherwin-Williams did not provide any documentation to support this information. Nonetheless, this information would not alter the site score because the nature of the exact uses of Building 50 was not used in assigning any HRS factor values.

9. Sherwin-Williams commented that the HRS documentation record states in the 5th paragraph on page 24: "As of June 20, 2002, a total of 44,785 gallons of product have been recovered and removed off site for the disposal since startup of the system in November 1997." Sherwin-Williams contended that this statement is a "[c]onflict in fact statement." It added that the HRS documentation record states on page 29, 3rd paragraph: "Approximately 8,275 gallons of this total volume collected is

primarily product from the product recovery tank. The remaining 36,510 gallons or product/water mix was collected during the ground water seep and response and recovery efforts. . ."

In response, EPA agrees that, consistent with the information on page 2-1 of Reference 48, the statement on page 24 of the HRS documentation record as proposed referring to "44,785 gallons of product" should refer to this total volume as product/water mixture. EPA revised the 5th paragraph on page 24 of the HRS documentation record to correctly refer to the total volume of 44,785 gallons as a product/water mixture. This comment has no impact on the site score because the characterization of Source 1, the free-phase product, as source type "other" remains unchanged even if the mixture removed from the recovery system is a product/water mixture, and the quantity was not used in the determination of any HRS factors. See Section 3.14.3, Source Hazardous Waste Quantity*, of this support document for additional discussion.*

10. Sherwin-Williams commented that the HRS documentation record states in the 1st paragraph on page 28, "[t]he PCA [principal component analysis] suggested that the samples were more related to paint thinner than gasoline." Sherwin-Williams contended that Reference 31, page 4-6, clarifies this statement by noting that the "correlation was regarded with limited confidence."

In response, page 4-6 of Reference 31 states the following:

> *The results of the free-phase product analyses were compared to the results of the analyses of fresh samples of gasoline and paint thinner. The comparison was done by principal component analysis (PCA). The PCA suggested that the samples were more related to paint-thinner rather than gasoline. However, because the comparison was of unweathered and undegraded standard against weathered and biodegraded environmental samples, the correlation was regarded with limited confidence.* [emphasis added]

As noted by Sherwin-Williams above, the HRS documentation record as proposed states that the product samples were more related to the paint thinner than gasoline, but that the HRS documentation record did not include the statement, "that correlation was regarded with limited confidence." EPA agrees that the HRS documentation record should be amended to include the totality of that statement from Reference 31 and will add the above quoted text from page 4-6 of Reference 31 to the HRS documentation record. EPA notes that the information on page 4-6 of Reference 31 supports that the free-phase product evaluated as Source 1 in the HRS documentation record is more related to paint manufacturing rather than to gasoline, and while the correlation was regarded with limited confidence, the qualification was due to the comparison of unweathered and undegraded standards to weathered and biodegraded environmental samples. This textual change does not change the site score.

11. Sherwin-Williams commented that the HRS documentation record states in the 3rd paragraph on page 29, referring to recovery of product/water: ". . . since startup of the recovery system in November 1979." Sherwin-Williams contended that the date of the system startup was 1997, not 1979.

In response, EPA agrees with Sherwin-Williams that the correct startup date of the recovery system is November 1997 and not November 1979 as stated in the HRS documentation record as proposed. According to page 2-1 of Reference 48 of the HRS documentation record, startup of the recovery system occurred in November 1997. The HRS documentation record has been revised accordingly. This comment has no impact on the site score because the start-up date of the recovery system was not used in assigning any HRS factor values.

12. Sherwin-Williams commented that the HRS documentation record on page 36, the third table, lists Sample PS-01 as a source soil sample. Sherwin-Williams contended that Sample PS-01 is a sample collected by Sherwin-Williams from a waste oil spill of unknown source. It added that the spill was reported to NJDEP and does not represent site conditions.

    In response, the HRS documentation record as proposed correctly identifies Sample PS-01 as a surface soil sample (collected on 2/21/1996 West of Building 50 on the facility property) and cites Reference 31, Table 4-5 (pages. 9 and 16) and Figure 3-2 to support this information. While Sherwin-Williams stated that this sample was from a waste oil spill by an unknown party, it did not provide a reference to support this information. However, according to pages 5-5 and 5-6 of Reference 31 of the HRS documentation record, in a discussion of the "Seep Area," the following statements are made concerning Sample PS-01:

> *Thus, an SVE* [soil vapor extraction] *and free-phase product recovery systems have been installed to address contaminated soils and free-phase product in this area . . . Remedial activities in this area have been ongoing for approximately 3 years . . . There has been only one soil sample collected in the Seep Area located immediately west of the Police station. This sample was collected prior to performing soil removal as part of the IEC* [immediate environmental concern] *RAW* [Remedial Action Workplan]. *. . . Sample PS-01 was collected prior to the start of the Police Station remediation to determine what analyses would be required for post-excavation sampling. The sample was collected from the most heavily stained soil in the area later excavated . . . Sherwin-Williams feels that the contamination in this area is a result of a waste oil releases from a floor drain from the adjacent shop, releases from the former Academy Paints hazardous materials storage area, and haphazard discharges of waste oil to the surface. . . .*

    EPA notes that the PS-01 surface soil sample was collected to characterize contamination in the seep area. Based on the characterization of Source 1, the seep has been characterized as free-phase product. (See pages 21-50 of the HRS documentation record as proposed.) There has been no confirmation of waste oils being released to the seep area via a floor drain; however, discharges of free-phase product to surface soils have been identified Based on the description of the sample collection, the presence of semivolatile organic compounds (non-ubiquitous hazardous substances), and the very high levels of lead (1190 mg/kg) and arsenic (29.3 mg/kg) in this sample, this sample was presented to identify hazardous substances released to soils in the vicinity of the seep area. Regardless of whether the contamination is a result of spilled waste oil or seepage of free product resulting from the facility paint operations, this comment would have no impact on the site score. Even if Sample PS-01 was removed from the HRS documentation record, there would be no change in the evaluation of Source 1 (the source associated with the sample) or the HRS site score because other samples also were used to characterize the source and contained the same hazardous substances. (See pages 35 to 48 of the HRS documentation record as proposed.)

13. Sherwin-Williams commented that the HRS documentation record states in the first paragraph on page 63:

> Available data, provided in Section 4.0 of this documentation record, indicate that Source 3 released hazardous substances to ground water and surface water. The contamination associated with the releases to ground water and surface water has not been addressed. Since no confirmatory samples were collected to document that all contamination associated with Source 3 was removed and releases to ground water

> and surface water from Source 3 have not been addressed, the removal action completed in the Source 3 is not considered a qualifying removal action.

Sherwin-Williams contended that although not required to demonstrate a qualifying removal, it did collect samples in Source 3 during the RI, and the results confirmed that the 1979 removal action was effective in removing impacted soils.

In response, the HRS documentation record as proposed correctly stated on pages 62 to 63 that no confirmatory soil samples were collected after the waste was removed from Source 3 that confirmed all hazardous substances ever placed into the source were removed. This would require collection of soil, ground water and surface water samples, which was not performed. See Section 3.13, Source 3 Removal*, of this support document.*

14. Brandywine stated that the information in the HRS documentation record concerning the number of tenants, employees, and the nature of tenant activities at the Paint Works is out-of-date. It added that there are currently 53 tenants with approximately 720 employees occupying office and warehouse space and that there is no manufacturing activity.

    In response, EPA agrees that the information concerning the number of tenants and employees on pages 16 to 17 of the HRS documentation record as proposed could be updated. However, the HRS documentation record states that the information is based on data collected as of November 2001 when the RI/FS was revised. (See page 2-2 of Reference 6 and 2-16 of Reference 31.) The HRS documentation record has been revised to include this current information on the number of tenants and employees at the facility, as provided by Sherwin-Williams. Regardless, this information was not used to evaluate any HRS scoring factors or any evaluations pertaining to human on-site exposure. The HRS documentation record did not claim that there are current manufacturing activities at the facility. This comment has no impact on the site score because the number of current tenants and employees was not used in assigning any HRS factor values.

3.18 Support for HRS Evaluation

Sherwin-Williams questioned the adequacy of the HRS docket for the site. Sherwin-Williams commented that the HRS evaluation was "incomplete and inaccurate, and does not support EPA's proposal" and presents examples for why it considers the HRS documentation package technically "incorrect." Sherwin-Williams cited what it considers "overarching issues," including (a) errors in application of the HRS, (b) data quality deficiencies, (c) deficiencies in selection of background samples, (d) inaccurate sample locations, and (e) inaccurate or insufficient HRS documentation record references.

In response, all of Sherwin-Williams's specific technical comments on the proposal of the Sherwin-Williams/Hilliards Creek HRS package have been addressed in this support document, and while some minor issues were identified, none were found to alter either the HRS surface water pathway score or the site score. In addition, as identified throughout this support document, even if EPA were to drop from consideration the following components of the site score, the site score would remain unchanged, and thus sufficient to qualify the site for placement on the NPL.

- The lagoon source which Sherwin-Williams considers removed.

- The two soil sources which Sherwin-Williams considers not adequately associated with hazardous substances because of a claimed lack of presentation of adequate background samples and proper documentation and consideration of the analytical data quality (although the data

were collected by Sherwin-Williams and presented in its RI report as sufficient to characterize the site), or because of partial removal actions.

- The association of substances with the lagoon and soil sources (although the identification of their association with the sources was based on an RI performed by Sherwin-Williams, and the supporting information was gleaned from the RI report Sherwin-Williams developed and submitted to the State of New Jersey under an ACO).

- The association of many of the multiple substances with the free-phase product source, which Sherwin-Williams asserted should have been considered a contaminated soil source.

- The 1998 EPA sampling event showing lead contamination throughout Hilliards Creek.

- The entire evaluation of the groundwater to surface water component of the surface water pathway, for which Sherwin-Williams claimed that EPA had not adequately documented the acceptability of the ground water sampling methodology Sherwin-Williams had used while working under an ACO with the State of New Jersey to collect the data for use in characterizing the contamination at the site.

With the above information removed from the HRS scoring, the surface water pathway scoring, based on the overland flow component, would remain 100.00 and the site score would remain 50.00 based solely on the following factors.

- The presence of the free-phase product source and substances, including lead, arsenic, and napthalene, associated with the source based on samples collected by Sherwin-Williams and EPA in separate events.

- Observed releases of lead, arsenic, and napthalene by direct observation of the free-phase product entering Hilliards Creek, a fact not disputed by Sherwin-Williams, and observed releases by chemical analyses based on 2004 sampling performed by EPA, based on the highest background levels in multiple background samples collected from locations representing similar environmental conditions to those in Hilliards Creek , and for which complete data quality documentation is presented.

- Observed releases of lead, arsenic, and napthalene by direct observation of the free-phase product entering Hilliards Creek, a fact not disputed by Sherwin-Williams, and observed releases by chemical analyses based on 2004 sampling performed by EPA, based on the highest background levels in multiple background samples collected from locations representing similar environmental conditions to those in Hilliards Creek , and for which complete data quality documentation is presented.

- The significantly high levels of lead and other substances throughout Hilliards Creek, a fact disputed by Sherwin-Williams only with respect to the possibility of other sources of the contamination hypothesized but unidentified by Sherwin-Williams.

- The identification of actually contaminated wetlands along Hilliards Creek and a human food chain fishery located downstream of the Sherwin-Williams facility, neither of which was disputed in Sherwin-Williams's comments.

Thus, Sherwin-Williams's technical comments, even if the majority of which were accepted, would not result in an HRS site score below 28.50, the score necessary to qualify the site for listing on the NPL.

4. Conclusion

The original HRS score for this site was 50.00. Based on the above response to comments, the score remains unchanged. The final scores for the Sherwin-Williams/Hilliards Creek site are:

Ground Water: Not Scored
Surface Water: 100.00
Soil Exposure: Not Scored
Air Pathway: Not Scored
HRS Score: 50.00